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# THE MANAGEMENT OF ACUTE INVERSION OF THE PUERPERAL UTERUS

## With Special Reference To Early Diagnosis, Manual Reposition, and Report of Ten Cases

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ACUTE inversion of the uterus is said to be of rare occurrence. Certainly it is one of the most unpleasant complications of the puerperium for the attending accoucheur, especially when the condition is not diagnosed early, for the patient may sink rapidly into profound shock, and death may follow within a few hours.

Standard textbooks discharge this subject with comparatively short articles. Its rarity is emphasized. DeLee[1] says, "Inversion of the uterus is rare in hospitals. Braun in 250,000 cases did not see one, and in Dublin only one case was observed in 190,000 consecutive labors." Williams[2] states, "This condition is a very rare, but important, cause of hemorrhage. According to Beckman, not a single case occurred in 250,000 labors in the St. Petersburg Lying-In Hospital. . . . Many obstetricians in large practice have never seen a case." Haselhorst[3] estimates the frequency to vary between 1:10,000 and 1:400,000 labors; in his own clinic, one case of inversion occurred in 28,000 deliveries. He also cites one case occurring in 32,000 in the Obstetrical Institute (Finkenau).

Is puerperal inversion of the uterus such a rare complication as one would be led to believe from the above statements? Perusal of the more recent literature may, perhaps, point to a necessary revision of statistics, and impress one with the fact that puerperal inversion is a frequent complication of the third stage of labor; that it does occur in hospitals, and in very competent hands. Fisher[4] in 1925 collected 38 cases that occurred in Toledo and the surrounding districts during the past 35 years. He remarks, "There may have been more, recognized or undiscerned, but the willingness to respond to inquiries has been indifferent, and it has been only by personal interviews that a report of these cases has been secured."

Approaching our neighborhood a little closer, Huntington, Irving and Kellogg[5] have reported seven cases of acute inversion occurring in the last decade. Of these, one was delivered by an obstetrician, three cases were delivered in the Boston Lying-In Hospital by internes specializing in obstetrics, and three were consultation cases. Looking into the records of the Boston City Hospital I have found that there have been four cases of acute inversion in its obstetrical service. Cohen[6] in reporting a case occurring in his own hands, also remarks about the lack of uniformity in the ratio of incidence, citing such disparities as 1:1440 to 1:400,000. Phaneuf[7] has reported three cases.

Recently, DeLee[8] stated that he had seen one case of partial inversion and knows of eleven cases, unpublished, with two deaths. I believe that this statement reveals the secret of the extremely low incidence of inversion recorded. We have been told rather scornfully that puerperal inversion occurs in the untrained hands of midwives, or in the unskilled hands of some general practitioners, and that such a condition does not occur in properly supervised hospitals. Therefore, when it does occur, a latent sense of guilt abstains the accoucheur from talking about it. Hence, many of the early recognized cases of inversion in which reposition is accomplished manually go unrecorded. Of cases requiring operative measures, or ending fatally, only some of such cases as were seen in consultation are reported; the records of others have undoubtedly been left to sleep quietly in hospital files. Then there is a group of unrecognized cases which have been buried with a diagnosis of "surgical shock," or "postpartum hemorrhage".

The high incidence of spontaneous inversion reported by Evans and Thorn, which according to Findley[9] was 29 and 54 per cent respectively, of their reported cases, should emphasize the point that puerperal inversion may occur in the hands of the midwife and of the general practitioner as well as in the hands of the specially trained obstetrician. Therefore, it would be much more logical to accept puerperal inversion as an unfortunate accidental complication of the third stage of labor due primarily to an atonic uterus, possibly precipitated by fundal implantation or adherent placenta, violent Credé, taxis on the cord, or short funis. If this one point predominated, if the impor-

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tance of this complication were emphasized in textbooks as well as in didactic and clinical lectures, and if instructions were given respecting early recognition and the simple measures for manual reposition, many a tragedy might be averted.

I have seen three cases of acute inversion of the uterus; the first while I was junior house officer at the Boston City Hospital, the second when training at the Boston Lying-In Hospital and the third in my own practice. This makes me feel that whatever I may have to say about inversion is pregnant with vivid personal observations and impressions, therefore worthy of presentation.

These three cases will be reported first, to be followed by five other cases obtained from the record files of the Boston City Hospital, and three additional ones kindly submitted to me for publication by three well-known Boston obstetricians.

CASE I. J. D., aged 22, was admitted to the Boston City Hospital on May 25, 1925, at 2:30 A. M. Her chief complaint was severe abdominal pain. Her past history was irrelevant. She stated that her menstruation, which had always been regular, had begun three days before, and had continued in small amount. The day before admission she had experienced severe, intermittent abdominal pain, growing in severity and frequency. She denied any possibility of pregnancy, and affirmed that she had never been pregnant.

Abdominal examination disclosed a pregnant uterus at term. Inspection of the perineum showed membranes bulging at the introitus. She was rushed to the delivery room where she was prepared and draped for delivery. The membranes, presently bulging outside of the introitus, were ruptured artificially, and the baby was delivered by a student nurse under my supervision, spontaneously and without anesthesia, at 3:19 A. M. The baby did not breathe and resuscitation efforts were useless. One ampule of pituitrin was given intramuscularly. The placenta was delivered by Credé at 3:30, and was followed by the expulsion of several large blood clots. Having become suspicious of something wrong, I scrubbed up. Another ampule of pituitrin was given, followed by one of ergot. Because of the continued bleeding and alarmingly rapid rise in pulse, 1000 cc. of saline solution were given subpectorally. The patient was presently very restless, complaining of severe suprapubic pain, radiating to her back, and was rapidly sinking into profound shock. Vaginal examination at 4:00 A. M. disclosed a pear-shaped organ filling the vagina. The visiting obstetrician on service was notified and he requested appropriate supportive treatment, blood transfusion, and preparation for immediate laparotomy. On his arrival, 4:45 A. M., the patient was moribund in spite of active shock treatment and died at 5:05 A. M., one hour and forty-four minutes after delivery.

This case illustrates very well how the inexpert accoucheur may easily become frightened by the problem facing him and seek help. Thus he wastes valuable time, and the golden opportunity to attempt manual replacement at once is lost. Secondly, blood transfusion, the most important and most effective weapon in combating surgical shock, was not given because of the lack of a suitable donor. These should always be on hand, at any hour, in every hospital!

CASE II. (This case has already been reported by Huntington, Irving and Kellogg in the *Am. J. Obs. and Gyn.*, Vol. XV., No. I, p. 34, Jan. 1928, Case 5.)

Para II. Aged 24. Her family physician delivered her of her first infant by high forceps after a six and half hour labor on August 8, 1924. She made a normal convalescence.

Her present pregnancy was uneventful. She was delivered normally, by an interne under supervision, at the Boston Lying-In Hospital at 8:32 A. M., August 17, 1926 after four hours of labor. The placenta was expressed fifteen minutes later by Credé's maneuver with some difficulty. There was partial retention of the membranes. The pulse was 120, the color good. The uterus did not contract well and the fundus was found to present a dimple on palpation. The house officer was unable to introduce his hand into the uterus to discover if it was partially inverted as the cervix was tightly contracted. The patient then went into collapse with irregular respirations and a rapid pulse. She was pallid, the skin was cold, the lips slightly cyanotic, and nystagmus was evident. The patient became unconscious, and the blood pressure fell to 50 systolic. More than the usual amount of blood postpartum escaped from the vagina. Under supportive treatment and while awaiting the arrival of a suitable donor for transfusion the pulse improved and the systolic blood pressure rose to 80.

At 12:20 P. M. the abdomen was opened and at the same time the patient was transfused with 500 cc. of citrated blood. The uterus was found to be partially inverted, the fundus and both cornua being in the funnel with the distal ends of both tubes and the ovaries just outside the margin of the ring. Reposition was effected in the usual manner and was accompanied by a sudden and marked improvement in the patient's condition. The lips became pink, the pulse improved and the respirations became rhythmic. The wound was then closed in layers.

The patient made an uninterrupted recovery. On discharge the cervix was found intact and posterior, the uterus anterior and well involuted. The vaults were free and there was no uterine discharge.

CASE III. A. S., aged 22, secundigravida. Her first delivery two years previously terminated with retained placenta, which was finally extracted manually with great difficulty, 1½ hours after the birth of the child. There was fundal implantation. Besides moderate postpartum hemorrhage, the puerperium was otherwise uneventful.

The present pregnancy has been uncomplicated. Arrangements were made for home delivery. Labor began at 2:00 A. M. At 11:00 A. M. the head was behind the perineum. Under primary ether anesthesia the second stage was terminated by easy low forceps. There was no undue bleeding and no tears. The uterus contracted well. Twenty minutes later the uterus was still contracting well, but several attempts to express the placenta by Credé were unsuccessful. One ampule of pituitrin was given intramuscularly. A few minutes later another attempt to deliver the placenta, which had apparently separated, was successful. This was immediately followed by a sudden gush of blood.

At this point, four significant observations were made, which made me suspicious about the termination of the third stage: (1) There was a peculiar sensation of something slipping from under my right hand which was holding the fundus. (2) The gush of blood, instead of following a straight line, described an arc, and part of it stained the sheet

over the patient's abdomen. (3) Although the placenta was entirely out of the vagina, delivery of the membranes had to be aided by some traction. (4) Abdominal palpation revealed the absence of a palpable uterus. After due change of gloves, vaginal examination showed a pear-shaped mass the size of an orange filling the vagina. Bimanual examination disclosed a complete inversion of the uterus: the crater was about 1½" in diameter and very easily made out by the abdominal hand, regardless of the thickness of the abdominal wall of this rather plump patient. Orders were given for an ambulance and the hospital notified to prepare the operating room for laparotomy. In the meantime the patient was reëtherized. The pulse remained of good quality, not over 120 per minute. Respirations were about 30 per minute, and somewhat stertorous. Besides moderate pallor, there were no other signs of shock. Following the technique to be described below, the inversion was reduced manually within ten minutes of its discovery. The uterus was packed with a three yard strip, and the patient was removed by ambulance to the Cambridge City Hospital. This measure was taken as a precaution against the possibility of re-inversion on removal of the pack. This pack was removed 24 hours later. The temperature and pulse were presently normal and remained normal throughout the puerperium.

This patient has been delivered in a subsequent labor and the placenta was delivered without difficulties.

The following cases were obtained from the record files of the Boston City Hospital and are presented unedited.

"Case IV. K. B., 19, admitted to the Boston City Hospital on May 13, 1918. Primipara, delivered at home by her family physician four days previously. On admission she stated she had had an instrumental delivery under ether anesthesia and had been flowing rather profusely ever since. She also stated that she had not urinated for three days, and complained of weakness and severe lower abdominal pain, more or less continuous.

"Physical examination showed a pale, anemic, young woman. Her mucous membranes were bleached out and her pupils widely dilated. Abdominal palpation disclosed a mass rising two fingers above the umbilicus, moderately tender. Pressure on this mass started a large stream of urine to escape via naturalis, and estimated as about four quarts. Vaginal examination showed an inverted uterus with its fundal placental attachment exposed. T. 98:4, P. 138.

"Attempts at vaginal replacement were unsuccessful.

"Laparotomy disclosed a ruptured bladder with a complete inversion of the uterus. The ring was dilated manually. Several attempts at reposition with combined pressure from below and taxis by means of vulsellum from above were also unsuccessful. Abdominal hysterectomy was performed. The rent in the bladder was repaired and a self-retaining catheter introduced through the urethra. The abdomen drained with a cigarette drain extending down to the pelvis.

"The patient died a few hours later."

"Case V. J. McD., aged 29, was admitted October 3, 1924. Secundigravida. Her first delivery had been instrumental after 15 hours' labor. Her baby weighed 8 lbs. and had remained in the hospital for three weeks. Her present pregnancy had been uneventful. She had been delivered by a nurse under supervision, normally, at 2 A. M. Brisk bleeding followed. Because the uterus was somewhat soft, massaging brought about a good contraction and the bleeding ceased. The placenta was expelled by Credé's method at 3 A. M. The patient fell rapidly into shock. Pituitrin and ergot were given intramuscularly; 1000 cc. of salt solution were given subpectorally, and the patient was kept warm with heaters and extra blankets. A few hours later a blood transfusion was given. Vaginal examination showed an inverted uterus. Attempts at manual replacement failed. Laparotomy: combined pressure from below and traction with vulsella from above restored the uterus to its normal position in the pelvis. Cigarette drainage. Transfused again with 500 cc. of blood. Uneventful convalescence."

"Case VI. M. W., aged 22, was admitted Nov. 17, 1930. Secundigravida. Her first delivery was normal. Her present pregnancy had been uneventful. She was delivered normally on November 18 at 1:45 A. M. of an 8 lb. baby, without perineal tears. The placenta was delivered by Credé 30 minutes later followed by considerable hemorrhage. She was given 1200 cc. of salt solution subpectorally, and her general condition apparently improved. Pituitrin and ergot had already been given routinely. At 3:15 her pulse was 126, the fundus reported as "somewhat soft" and bleeding continued slightly more than normal but not excessive. At 5:30 the patient became very restless, complaining of severe lower abdominal pain, and at 5:45 she fell into profound shock.

"She died at 6:30 A. M., four hours and fifteen minutes after delivery of the placenta. Postmortem suprapubic pressure brought an inverted uterus outside of the vagina."

Here again we have a case that perhaps might have been saved if the true cause of bleeding had been investigated by a timely vaginal examination. Once again, a blood transfusion might have tided the patient through the shock.

"Case VII. M. McD., aged 24, was rushed to the Boston City Hospital by her own family physician on September 29, 1930, at 10:10 P. M. Delivered at home normally at 9:25 P. M. The placenta had been expelled Credé at 9:40 P. M. and had remained adherent to an inverted uterus.

"The patient was obviously in shock, markedly anemic, cold and clammy and stuporous, pulse 148. The abdomen was soft; the fundus not felt. Perineal inspection showed a complete prolapse of an inverted uterus with the placenta still adherent, and the entire mass wrapped up in iodoform gauze. Shock treatment was instituted at once, but the patient sank rapidly and died at 11:30 P. M.

"Postmortem examination showed the placenta densely adherent to the fundus."

"Case VIII. T. F., aged 20, was admitted June 21, 1931. Secundigravida. Her first delivery, completed by low forceps, was followed by an uneventful convalescence. Her present pregnancy had also been uneventful. She was delivered normally of a 7½ lb. baby at 11:35 P. M. Perineum intact. The placenta was expressed by Credé ten minutes later. The nurse reported that she could not feel the fundus. Vaginal examination disclosed an inverted uterus. Pulse 120, B. P. 70/50; color poor, ashen gray. Skin cold and clammy. Taken to the operating room and under gas-oxygen-ether anesthesia manual reposition was tried unsuccessfully about one hour after delivery. Laparotomy: Reposition established easily after the technique of Huntington[5]. Two hours later 500 cc. of citrated blood were given intravenously with marked improvement in the general condition. Recovery was uneventful, and the patient was discharged on the thirteenth day postpartum."

The following three cases were very kindly

submitted to me for publication by three fellow obstetricians, and are presented in their original forms.

"CASE IX. Mrs. K. seen in consultation on February 9, 1931. Secundipara, just been through precipitate labor with the placenta following immediately on birth of the baby, the third stage being very short. Directly following the delivery of the placenta, the patient went into severe shock; the anesthetist reported her pulseless, pallid, with skin cold and clammy. Immediately suspecting hemorrhage, her physician felt for her uterus and was unable to find the fundus. Inspecting the vaginal outlet for hemorrhage, he found a protruding mass which he thought was a second placenta. Closer examination found it hard and bleeding. He immediately lowered the head of the bed and gave 1200 cc. of salt solution subpectorally. One ampule each of pituitrin and ergot.

"She was seen within three quarters of an hour of her delivery. The patient's condition had improved slightly under the salt solution. Under ether, and by slow 'cork-screw manipulation' from below under aseptic precautions, the uterus was replaced satisfactorily. The uterus was then packed with iodoform gauze. Examination after reposition showed old extensive lacerations on both sides and marked cystocele and rectocele. The packing was removed in twenty-four hours and an intrauterine douche of sterile water and alcohol given. Convalescence was uneventful."

"CASE X. L. E., 21, primipara. Normal pregnancy. Delivered at the Quincy City Hospital on October 19, 1930, low forceps, male child 7½ lbs. Moderate Credé method to the placenta by the nurse. Placenta delivered 20 minutes later followed by complete inversion of the uterus, with the membranes adherent to the uterine wall. Uterus replaced manually. Second degree perineal tear repaired. Bleeding not excessive. Moderate shock with pulse of 120-140. 600 cc. saline given subpectorally. Heaters, blankets, and caffein sodio benzoate ampule 1. On the following day pulse 118; condition better.

"October 24: Slight elevation of temperature since delivery, with chill on the evening of October 23. Slight odor to lochia. Temp. 103. Patient catheterized twice daily. October 27, temp. 99.6, pulse 108. October 30, temp. 103, pulse 130. Vaginal examination on this day showed the fundus in the vagina, evidently a re-inversion. Consultation with another obstetrician.

"October 31: Blood transfusion. Laparotomy under gas-oxygen anesthesia. Uterus found inverted with tubes and ovaries pushed within the crater. Some thin adhesions noted. Tenaculum forceps inserted within the cavity grasping the fundus, and with the hand of an assistant giving gentle pressure from below, the uterus was replaced without any difficulty. Small cigarette drain was inserted into Douglas cul-de-sac, and the abdomen closed in layers. There was slight elevation of temperature for a few days, and on November 24 she was discharged from the hospital. The mother and child progressed normally and today both are living and well."

"CASE XI. A. W., aged 28, secundigravida. Easy delivery by low forceps. Placenta expressed by Credé's method. Routine postpartum vaginal examination disclosed an inverted uterus. With the patient still under ether, the uterus was easily replaced manually and remained replaced. Recovery was uneventful."

The above group of cases affords us a fair opportunity to check up the probable etiological factors which are generally accepted by most of the writers on this subject.

(1) Traction on the cord was not recorded in any of these cases.

(2) Too powerful Credé expression of the placenta may have been exerted in Cases I, III, V, VI and X. Hasn't every obstetrician had to use considerable force in some cases to expel the placenta, without inverting the uterus?

(3) Fundal implantation recorded in Cases IV and VII.

(4) Adherent placenta classically shown in Case VII.

(5) Short funis, none.

(6) Atonic uterus: whether atony of the uterus occurs primarily in its lower segment or in its fundal portion is still a debatable question. Undoubtedly some form of atony must have been present in all these cases. Since the uterus was felt contracting in most of them, we believe that atony, if present, must have involved the lower uterine segment.

(7) Eight cases occurred in hospitals, three of them were delivered in homes and were hospitalized later. Three cases were delivered by general practitioners, five by, or under supervision of, house officers training for specialty in obstetrics, and three by obstetricians.

## SYMPTOMATOLOGY

A study of the above cases reveals three outstanding symptoms: prolonged postpartum hemorrhage, lower abdominal pain and surgical shock. In the extremely rare case none of these symptoms may be present, then the true condition will not be discovered by the keenest observer (unless we preach routine postpartum vaginal examinations), but will pass on to the chronic state.

Hemorrhage, the most important symptom, may be slight or profuse; usually it is of the continuous oozing type of bright red blood trickling over the perineum. It may be ushered in by a profuse gush emerging from the vagina, or follow roughly the curve of Carus, with, or immediately after, the expulsion of the placenta.

Pain may vary in intensity, but it is always present unless the patient is under narcosis. It is usually of a sharp, continuous, cramp-like character, localized and most intense in the region of the bladder and radiating to the inguinal regions. Unconsciously the patient will draw up her knees, carry her hands over the hypogastrium, and voice her pain with unmistakable groaning and calling for help.

Within a longer or shorter period of time, signs of shock will be manifested with increasingly alarming severity. The pulse gives the first warning, rapidly rising in rate and becoming smaller in volume to absolute imperceptibility. The patient's facies is constantly changing from the flush usually present during the ex-

pulsive efforts of the third stage, to pallor, on to livid whiteness with cold sweat. Transient unconsciousness supervenes, followed by profound stupor with stertorous respiration.

In presence of any of the above symptoms, there is only one logical action to be taken: bimanual pelvic examination. Fully aware of increasing one's chances of sepsis, vaginal examination, after having carefully changed one's gloves, is strongly indicated. The risk from sepsis is very much less than from overlooking a possible inversion.

In the presence of a partial inversion the gross pathology will be felt only by the abdominal hand in the shape of an indentation, or a cupping, perhaps better termed crater, which has partly replaced the convex dome of the fundus. If the inversion is complete a mass may appear at the introitus or will be found to fill part of the vagina. This mass will be pear-shaped, of the consistency and "feel" of a gauze sponge found in the abdomen. If light can be thrown on it, the mass will appear bright red and oozing blood. At times the placenta may be found adherent to it, and may have to be peeled off. On palpating for the fundus, this will not be found, but one may feel a crater-like depression, or cupping, encircled by a ring, representing the constriction of the neck of the inverted uterus.

### TREATMENT

If discovered early, manual replacement of the inverted uterus may be a comparatively simple procedure. Avoid further use of pituitrin or ergot because the former may convert a partial into a complete inversion; the latter will act on the lower uterine segment and on the cervix, thus increasing the constriction ring and make replacement more difficult, if not impossible. The technique of the procedure in reposing an acutely inverted uterus, may be briefly summarized in the following steps, which are shown diagrammatically in the accompanying drawings.

(1) The patient must be under relaxing, surgical anesthesia.

(2) Dilatation of the ring by the abdominal fingers, by inserting three, four and finally five tips into it, and exerting pressure outward. (Fig. 1.)

(3) Pressure inward on the lower uterine segment, close to the cervix, by the index, middle and ring fingers, thus replacing that portion of the uterus which inverted last. (Fig. 2.)

(4) Holding on to any gain toward replacement and continuing "feeding" of the body of the uterus through the crater, always working on the same side. (Figs. 3, 4 and 5.)

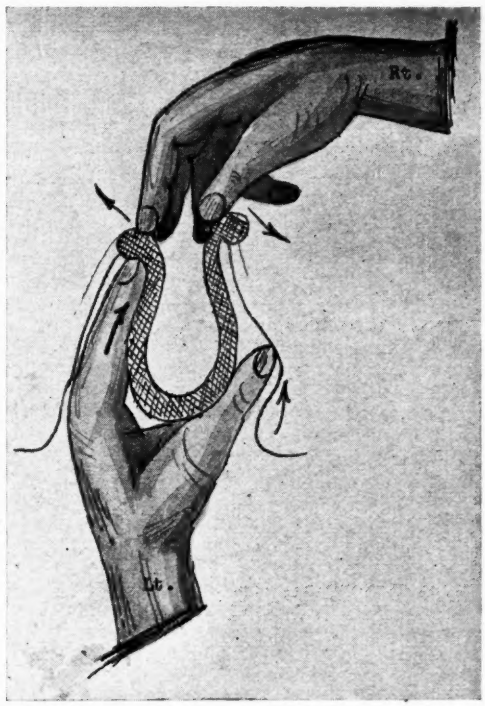


FIG. 1. First step. Dilatation of the ring. The left hand is in the vagina, the right hand on the abdominal wall. The arrows point to the direction of the pressure as exerted by the fingers.

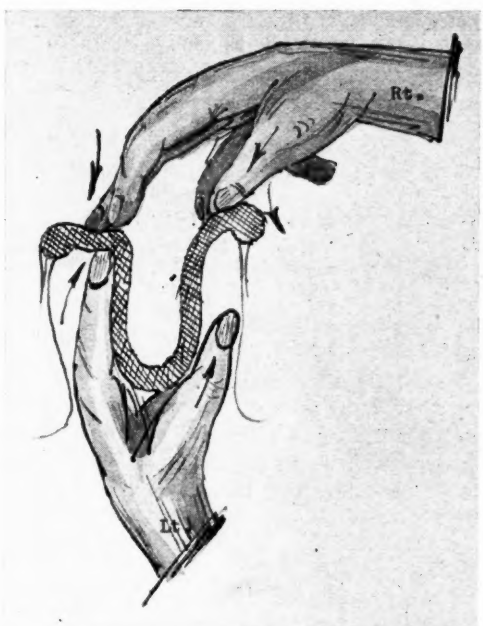


FIG. 2. The ring has been well dilated. Pressure is now applied against the lower uterine segment by the index, middle and ring fingers of the left hand, while the fingers of the right hand keep the ring well dilated. This is the most difficult step in the procedure because of the tendency of the uterus to preserve its inversion.

(5) Having in the fourth step completed the replacement of one side of the body of the uterus, the fundus and, with it, the entire uterus, will snap back into the pelvis, and the vaginal hand will be felt within the cavity of the uterus. (Fig. 6.)

(6) The last step consists in holding the hand within the uterine cavity, to prevent a recurrence of the inversion, and gently massaging the fundus by the abdominal hand while an

FIG. 3. Beginning of the reposition. The right hand still preserving the dilatation of the ring and also aiding in holding on to the partly replaced lower uterine segment brought about by the left hand.

oxytocic is administered. On firm contraction of the uterus the hand may be withdrawn, or, as precaution against a recurrence the uterine

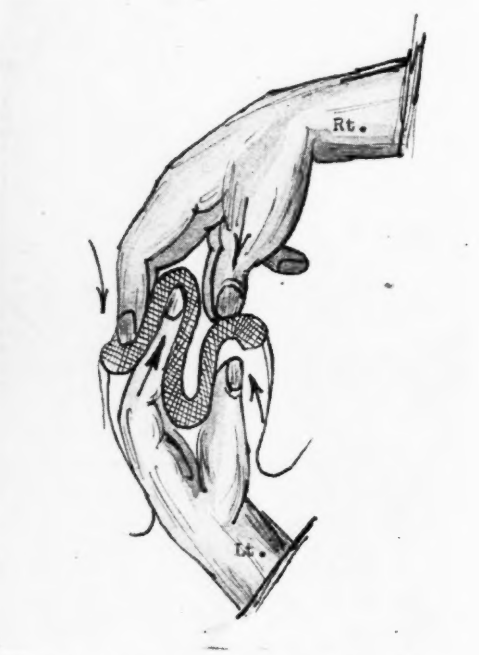


FIG. 4. One step further toward reposition.

cavity may be packed with a sterile three yard strip. Replacement of the uterus is quickly followed by a striking improvement in the patient's condition. Circulation will quickly improve, color will return to the lips, the pulse will become slower and more voluminous, the body will become warm and one may rest assured that the patient is comparatively safe.

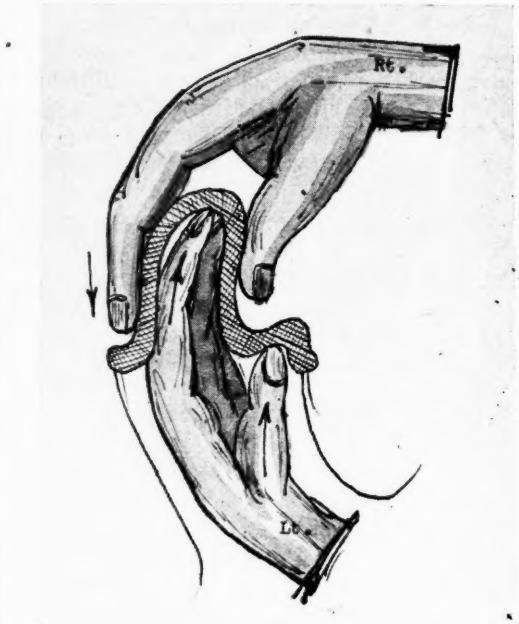


FIG. 5. At about this stage of the reposition the entire uterus will be felt snapping back into its normal position in the pelvis.

(7) The packing strip is gently removed after 24 hours, keeping in mind the possibility of re-inversion. If the organ remains in the normal position, pituitrin is repeated.

FIG. 6. Reposition completed. The left hand, fist-like, in the uterine cavity and so held until uterine contractions occur; the right hand palpating and gently massaging the fundus. Pituitrin is presently administered, followed by packing of the uterine cavity with a sterile three-yard strip.

If done early and carefully, this technique will be successful in most of the cases. One must guard against rupture of the uterus by undue violent pressure with the vaginal fingers.

Pressure on the fundus must be avoided especially if the ring is not well dilated.

Failing to replace the uterus manually after a careful effort, the shock must be treated: blood transfusions, saline infusions, heat, lowering the patient's head and stimulation are indicated. Of the several operative measures advocated by many authors, abdominal reposition by Huntington's technique seems to be the method of choice. This consists in a laparotomy, and replacement of the organ with the aid of Allis forceps inserted within the crater for about an inch grasping the surface of the uterus on both sides. Simultaneous upward pull will draw a portion of the uterus out of the ring and gradually, in successive bites and upward traction, the uterus is restored to its normal shape and position in the abdominal cavity. This technique is quite simple and has proved life-saving in all cases in which it has been used.

Findley[9] advocates a more general application of vaginal hysterectomy because of the high incidence of fatalities ascribed to sepsis, which he estimates to be the cause of about one-third of all deaths. Sepsis, in our series of eleven cases, was apparently present in Case X. It would, perhaps, have been better judgment to manage the case vaginally rather than abdominally. However, the fact that this patient stood an abdominal reposition and recovered, speaks well for the operation.

In the clean, chronic cases, Spinelli's operation seems to be the operation of choice.

### MORTALITY

Four out of eleven patients died; a mortality of 36%, for this group of cases, is undoubtedly appallingly high enough to emphasize the seriousness of this puerperal complication. The cause of death was surgical shock and exsanguination in all four cases. Case I died within an hour and forty-five minutes, Case V within five hours after delivery, and Case VII within two hours after delivery, a very significant fact, and one to be taken into consideration before deciding to treat the shock and delay surgical intervention. Death from sepsis, as emphasized by some authors, is peculiarly absent in this series. Two of the fatal cases were delivered in homes by general practitioners, two were delivered in hospitals by house officers.

### CONCLUSIONS

1. Acute inversion of the puerperal uterus is a more common complication than one is led to believe.
2. This accident may happen in well-supervised clinics and in very competent hands.
3. Hemorrhage, pain, and surgical shock are the outstanding symptoms, and examination will disclose the uterus in the vagina, the fundus being replaced by an indentation, a cupping or crater.
4. An effort should be made to emphasize the importance of this complication in medical schools and to the medical profession at large, both in regard to its early recognition and the technique of manual replacement.
5. Manual replacement will usually be successful if the condition is recognized early.
6. Abdominal replacement following Huntington's technique should be the method of choice in such cases where efforts at manual reposition fail. If the condition goes unrecognized for several hours and in presence of a hard and tight ring formation, manual reposition should not be attempted, but the abdominal route should be chosen.
7. In the chronic type of inversion the better approach is by the vaginal route following Spinelli's operation for the clean cases, whereas vaginal hysterectomy should be the choice in presence of sepsis.

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## ONLY THREE HOSPITALS IN THE UNITED STATES COMPLETELY STAFFED BY WOMEN

Of the over 7,000 hospitals in the United States there are only three which are entirely staffed by women physicians, one in Chicago, one in Boston and one in New York. These hospitals are all occupying important positions in the medical world. Here in New England the Hospital for Women and Children on Dimock Street, Roxbury, was founded in 1862 by Lucy Goddard, Marie E. Zakrzewska and Ednah D. Cheney. It early established a reputation for excellent service, and has steadily grown. It now has a staff of thirty women doctors with eight women students acting as interns. Miss Jessie E. Catton is superintendent.

# NEW HAMPSHIRE MEDICAL SOCIETY

## RADIATION IN OPERABLE CANCER*

BY DOUGLAS QUICK, M.D.,† NEW YORK CITY

THE title as given in this program refers to the place of radiation in curative efforts and in contradistinction to palliative therapy only. I have taken the liberty of selecting this particular topic for two reasons especially; first, because I think that frequently, when radiation is referred to, it is in terms of its palliative use, the thought being, if the case is beyond any surgical intervention, then why not consider the employment of radiation in some form; secondly, I have selected this topic because so very frequently, even in the more favorable or earlier case, if radiation is thought of it is rather in terms of competition with operative surgery than otherwise. The paper is not meant to open any controversy on the matter of competition between radiation and operative surgery. As a matter of fact, curability in cancer, whatever it may be, is, in my judgment, increased by a combination of these methods. They are complementary rather than competitive, and actually there is no division of the field between them.

I think perhaps it would simplify matters a bit if we were to discuss the subject under three headings, first, the place of radiation as a preoperative or postoperative measure; secondly, radiation in immediate conjunction with surgical procedures, which refers very largely to implantation in connection with operative surgery in one way or the other; and finally, those cases in which the radiation possibly replaces operative measures.

Before going into them there are a few general considerations to which I should like to refer, largely by way of explanation.

In speaking of radiation I hope you will all understand that I refer both to x-rays and radium. I should like to say that there is very little overlapping of the field, in my judgment, between these two agents. We very frequently hear the question, shall we use radium or shall we use x-radiation? I think the only point in which there has ever been overlapping is more a matter of theoretical than practical use. That bears, of course, only on the external application of radium.

It is all very interesting and very necessary for a Cancer Institute to try out external irradiation with radium. It requires a lot of radium. It is economically a very expensive problem, and while, if enough of it is available, I think there is no question but that probably more can be accomplished with gamma radiation in a given case and with the few patients who are fortunate enough to have access to it, but from a strictly practical standpoint our dependence for external irradiation is upon x-radiation. The large amounts of radium which are being used in one place or another are to be considered more as a guide than as meeting practical everyday problems of external therapy.

When it comes to the more localized application, to use within body cavities and for implantation within tissues, of course radium is the agent which must be employed. So that, just to repeat the distinction between x-radiation and radium, therefore, I would say that x-rays are for application externally over large surfaces of the body, whereas radium, on the other hand, is for implantation within tissues, for use within body cavities, or for external application over very limited areas.

Next, we have the advantage—not a very great while previously, but at least a reasonable period, 15 or more years—of practical experience with the general effects of radiation on various types of tumor growth. During that period a very great deal of valuable experience has been gained which serves as an excellent guide to us in carrying on the work in general. We are not dependent nearly so much upon the empiric methods as we were a few years ago. We at least know within reasonable limits what may be expected with a given type of tumor and under known conditions.

Empiric treatment and dosage have been largely replaced by more accurate measurements. Ten or fifteen years ago it was largely a matter of trying out the effects of radiation, whether it was x-radiation or radium, for that matter, but more particularly with radium, to see what the effect might be on a given growth. Today, within reasonable limits, I think we may form a fairly shrewd judgment, at least, as to what may be accomplished in the given case, knowing the type of growth and the other factors which influence the effects of radiation. We are not dependent today nearly so much on the rule-of-thumb method or empiricism as we were just a few years ago.

During the past five years or less a very great deal of work has been done in the matter of accurate measurement of dosage, so that today we can prescribe doses of radiation more in the direction, at least, of the accuracy with which the dosage of various drugs is known. Along with that, there are improvements in technical

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methods, particularly the matter of filtration of radiation, so that in striking off that balance as between normal and abnormal tissue the minimum amount of damage is done to the normal tissue as compared with the damaging effect on the tumor tissue.

Finally, another guide which has been of tremendous value to us is that of so-called tumor grading, which serves as a very excellent guide, within reasonable limits, in the selection of the type of radiation to be employed and the degree of intensity of it. By that I mean that the more fully differentiated growths are much more resistant to a given quantity of radiation, whereas the embryonal types—growths showing very little cellular differentiation—respond to much lesser amounts of radiation. There is a reaction in the other direction, however, in that they are prone to much wider dissemination throughout the body.

For instance, if we have a growth at the base of the tongue, a section of which shows fully differentiated epidermoid carcinoma, we know at once we can do very little, practically nothing, toward clearing that up by any amount of external irradiation short of burning the skin, and therefore resort must be had to the placing of radium in some fashion in more intimate contact, which means burying it in the growth. On the other hand, if we have one undifferentiated epidermoid we may very well eradicate it entirely by external irradiation without recourse to the implantation of radium in the pharynx. That is of tremendous value in guiding the selection of the method of radiating it and also the intensity of the radiation.

I think a word of caution, though, ought to be mentioned in that connection and the idea should not be created that simply by putting a slide under the microscope one may be able to tell whether it is a very radiosensitive growth or a very radioresistant one—in other words, gain all of the information from it which, as an example, we might from fingerprints.

The actual grading of tumors, with an eye to guiding in radiological or radiotherapeutic treatment, is not something which is quite so simple as that. There are many factors which enter into the matter, combined with the study under the microscope, in forming an opinion. The location in which the tumor is growing, its relationship to the parts around it, the age of the patient, the general health, all have their bearing in the matter of the physical appraisal, so that it ought not to be considered to be a simple proposition by any means.

Referring to the three headings which I suggested, in the discussion,—first, the matter of radiation as a preoperative or postoperative measure. Perhaps some of my radiological friends present will disagree with me, but I must say that in choosing between the methods of treatment in connection with operative surgery I feel very much more strongly in favor of, and place much more reliance upon, preoperative radiation than I do upon postoperative radiation. That does not mean that one should not take advantage of whatever benefit there may be in radiating a strictly operable case after the operable procedure has been carried out for whatever it may be worth, because after all in dealing with cancer every one or two per cent that we can add to making the result more permanent is certainly worth while; but I am speaking of choosing between preoperative and postoperative.

For instance, suppose it is a breast, which is one of the fields in which the problem arises perhaps more pointedly than in others. I would very much rather carry out the attendant radiation first and do the radical mastectomy second than carry out the operative procedure immediately and follow it by radiation.

One cannot go into the detail of all of the reasons in a general discussion such as this but, briefly, I would say that, if we have any faith in our radiation at all, we must regard it as an agent which produces a degree of tumor regression, and that operative procedures carried out during the period of regression of the tumor certainly are safer than those carried out with the disease under full steam ahead and extremely active.

Secondly, to obtain the maximum of beneficial effect, the maximum of favorable reaction from radiation under any circumstances, the blood supply must be intact and uninterrupted in so far as possible. If the field of the tumor-bearing area is interfered with and interrupted by operative procedure, it certainly leaves it in a much less favorable condition to react favorably to a given amount of radiation if it is used following the operative procedure rather than before.

Next, irradiation in immediate conjunction with operative surgery. As I said in enumerating these headings, that is largely for the purpose of implanting radium in some form, whether it be the element or radium seeds, or for access to tumor-bearing areas and various drainage procedures. Where radiation is employed rather freely in conjunction with cancer work, I do not believe there is any tremendous lessening in the amount of actual operative work done. The character of the surgery employed is different from that employed in a strictly operative clinic where radiation is not employed. The character of the surgery is quite different. One might refer to it as strictly cancer surgery. That is, there are many operative procedures necessary in conjunction with treating certain growths with radium which otherwise would not be employed, and in general the character of the operative work is of lesser severity and entails less general shock,—in other

words, there are fewer of the more mutilating operative procedures carried out.

For instance, there are operative procedures for access to the tumor-bearing area. Take growths about the maxillary sinus where they require very intimate contact with radium and very accurate placement. It is not possible except in a very few cases to get radium to the actual point where it will do its work most effectively without direct access more frequently than is possible simply from the outside or through the mouth. The same is true in the matter of drainage. One may very thoroughly radiate a growth within the antrum, and yet have everything go badly because of blocked-up secretions and other material dammed back in the sinuses which will cause the patients to lose their lives from infection alone unless proper and adequate drainage is afforded.

In some instances where carcinoma has invaded bone, in which event the response to any radiation is very poor, such as growths around the lower jaw, we will say, removal of the bone following heavy radiation of the growth in the soft parts by radium is, we feel, necessary for the best interests of the case, for the simple reason that the response of a tumor of that type growing within bone is very poor indeed.

Frequently, tumors are exposed surgically with the pre-operative idea that they are strictly operative growths; but, when the operative field is exposed, we find that the case is not operable. If there were available an adequate radium supply, then and not later is the most advantageous time to employ radiation, and with the tumor exposed, radium can be placed directly into the growth and the wound closed, rather than closing it up and being forced to resort usually to external irradiation alone at a later date.

There are many cases, referring again to the head and neck, that are obviously inoperable from a technical or anatomical standpoint, or for other reasons, dependent upon the general distribution of the disease, where, from a palliative standpoint, the growth may be very much held in check for an indefinite period if radium is placed in it. It has been our experience that one cannot do that in many of the cases, at least, to best advantage by simply attempting to inject radium in some amount under the skin. A simple operative procedure under local anesthesia will expose the part and permit of direct implantation of radon.

I cite this as a simple example of operative procedure which will make possible the more accurate irradiation of tumor-bearing areas than would otherwise be the case if you attempted to do it by radiation alone, foregoing all operative procedure.

Next, radiation replacing operative surgery. In a general way I think there are rather few cases of cancer, as we meet them day after day, where at one stage or another in the course of the disease all these various methods or agents to which I have referred do not play a part or at least come up for discussion as to possibility of use.

There are a few groups, however, in which radiation has very largely, if not entirely, replaced surgery. We think first in that connection of the skin field. Skin growths are for the most part largely basal-celled, of course, but some of them are squamous celled. Their treatment is largely a radium problem where adequate supplies of radium are available. Even here, however, there are certain cases that have been inadequately radiated over a period of time, where it is wiser to resort to surgical removal; but, speaking just in a broad general way, the great percentage of skin growths belong in the field of radiation rather than in that of operative surgery.

Going on to what you might regard as the strictly major types of growth, carcinoma of the cervix uteri, I think in the view of most people engaged seriously in this sort of work, is a problem for radiation and not one for operative surgery. I will say just a word about that in connection with the pelvic group, but I mention it as probably the outstanding example of a major type of malignant disease in which radiation certainly holds precedence over operative surgery; that is, carcinoma of the cervix ought to be treated by radiation and not by resort to hysterectomy.

Just a word applying to these various methods in certain of the main groups. Cancer of the skin I have spoken of. Cancer of the mouth would be probably the best example of combining operative surgical measures and radiation in both forms. It has been our custom for a good many years at the Memorial Hospital (New York), with which I have been associated until very recently, to employ radiation, both external radiation in the form of radium or $x_1$rays, and radium by direct implantation for the treatment of the primary growth within the mouth or pharynx. In the neck, however, the problem is a bit different. We employ external irradiation as a routine in all cases. The metastatic nodes of fully differential carcinoma are dealt with by complete unilateral dissection—the others by surgical exposure and radon implantation.

I think it is only fair to say in that connection, however, that it has never been our plan to resort to routine block section in the neck with no nodes perceptible. We have reserved our dissection for those cases in which a node is palpable; and, at the other end of the scale, we have limited our dissection to fully differentiated growths.

Cancer of the breast comprises probably a dangerous group of cases to discuss in connection with operative surgery and radiation and combining the two. I think it is very safe, however,

to say that the curability in breast cancer is substantially enhanced by a very vigorous resort to radiation. I doubt very much if indifferent radiation, very limited amounts of radiation, ought to be encouraged, because breast cancer, speaking of it altogether and not attempting to differentiate the various types, is substantially resistant to radiation. It is a disease which infiltrates widely in fat tissue, and therefore is a very resistant type of growth. Any radiation which is of value must be of necessity a very substantial radiation. I think it is safe to say that as radiation becomes more intensive the actual field of operability in breast cancer is being narrowed. I do not mean for a moment that radiation is replacing operative surgery in the breast, as I referred to in the case of the cervix uteri a moment ago, but it is limiting, very decidedly, the field of operability in breast cancer.

I have made reference to the cervix uteri before, speaking of cancer of the uterus as an organ. Cancer of the fundus uteri is strictly in opposition to that of the cervix, so far as the method of treatment which is accepted as being best at the present time is concerned.

There is a very marked difference between cancer of the cervix and cancer of the fundus. Histologically they are different; anatomically they are decidedly different. Carcinoma of the fundus uteri is an adenocarcinoma, in a very thick-walled organ, where it is a strictly localized disease for a long period at least and lends itself admirably from a technical standpoint to extirpation by operation—in other words, hysterectomy. So you see that in one organ you have two types of growth, that in the cervix which is a radiation problem, and that in the fundus which is very largely at least a surgical problem.

Strangely enough, in considering these methods there is little controversy over the groups where irradiation is accepted as replacing operative surgery. I think among cancer experts there is probably less controversy over this uterine problem, let us say, than over many of the other groups of cases. More of the controversy centers around the various contentions of surgery and radiation,—in other words, how far shall we go with radiation, and how little surgery shall we do, and how much surgery shall we resort to, and how little radiation shall we put into it?

However, with our increasing knowledge of radiological methods, radiation measurements, and so forth, I think radiation is steadily gaining; and finally, I should say that a combination of measures that will increase curability, reduce morbidity, and, from its general conservative influence, strengthen the confidence of the public is worthy at least of serious consideration.

## RESPONSIBILITY OF THE MEDICAL MEN IN THE CONTROL OF CANCER*

BY BURTON T. SIMPSON, M.D.,† BUFFALO, N. Y.

I CONSIDER it a great pleasure and honor to come before your Society to speak to you on this subject that seems very important to me.

The subject of the responsibility of the medical man in the control of cancer is one that does not appeal too strongly to the general practitioner of medicine. As a matter of fact, my experience has taught me that the general practitioner is very pessimistic about the subject of cancer, and when you inquire into this it is possibly because the average medical man sees perhaps three or four cases of cancer a year, and they are usually advanced cases when they come to him for which he can do little or nothing, or, if they are early enough, he sends them off to the surgeon or radiologist and therefore loses them, and soon they come back and again burden him with their complaint until they die, and, naturally, the practicing physician is pessimistic about the subject of cancer.

I have had a few experiences on the other hand, however, with optimism on the subject of cancer, and one of the first that struck me was from a surgeon in the University of Buffalo, the Professor of Surgery, who had a very large cancer clientele; as a matter of fact, he thought because he had so many cancer cases that Buffalo was a cancer belt, and he prepared a paper on this fact. He was asked to give some lectures in Philadelphia, and the lectures he chose to give were on surgical pathology, and he took a year's leave of absence and went to the Pasteur Institute to study pathology, and there he conceived the idea of studying cancer from the laboratory standpoint. When he came back to Buffalo he took his enthusiasm to Governor Black and persuaded him to ask the legislature to appropriate a small sum of money for the laboratory study of cancer, and he assured Governor Black that if he could give him $10,000 he could clear up the entire cancer problem in two years. That was a remarkable example of optimism.

Another one. My former chief and predecessor, Dr. Harvey Gaylord, who was the Director of the Institute, and shortly after the war went to Europe, studied the effects of x-ray therapy upon cancer, and happened to go to some of those clinics where they treated uterine cancer. As you know, uterine cancer melts

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away under the effects of radiation. At that time I was the pathologist at the Institute. Dr. Gaylord came back, came into the laboratory and said, "Here, I want you to get a fine collection of cancer specimens. Put them up beautifully and we will have a fine display because within a short time there will be no more pathological specimens of cancer. All cancer is going to be caused to disappear in a few years by radiation, therefore there will be none cut out, so we will have a unique collection of cancer specimens." That was another evidence of optimism.

The third to which I should like to call your attention was about thirteen years ago when some of the gynecologists, realizing the bad condition of the cancer patients who came to them, thought that if they could educate the public to recognize the early signs of cancer and precancerous conditions, they could get patients to start treatment early enough so that the mortality of cancer would be tremendously decreased. So there was formed the American Society for the Control of Cancer whose object was to spread educational propaganda among the laity, telling them about the early signs of cancer and precancerous conditions and urging them to apply to their physician for diagnosis and treatment. That was another evidence of optimism because for a number of years, despite these intensive educational activities of this Society, the mortality from cancer was not materially decreased.

So that the question came up, What is the trouble? One of the factors found by people who were interested in cancer in the hospitals and cancer institutes was that many cases were being neglected by the medical man—the medical man perhaps not being on his toes to recognize the case early when it was necessary. Now these are examples that might be of interest to you to illustrate the different ways in which the general practitioner may overlook cancer cases which came to my attention at the Institute. I might cite them to you.

For instance, up in the northern part of the state far removed from Buffalo we have many cases coming from Watertown, my home town. They come across the state for treatment at the Institute, so much so that the Chief of Staff says that Watertown is a cancer belt. We get more cases from Watertown than anywhere else in the state. Well, the reason for that is clear to me. The people who are in the cancer age at this time in Watertown are schoolboy friends of mine, and when their doctor told them to go to the State Institute and they said they did not want to go, the reply was, "You remember Burt Simpson. He is there, you will find him there"—and so they are coming. There came these people, old friends of mine, and naturally I am prone to inquire why they got into the condition that they did, because I am sorry to have to report that about 90 or more per cent of the patients that come to the Institute are advanced cases.

The first one I will tell you about is a woman of the cancer age who came with advanced cancer of the breast, with nodes in the axilla, and I said to her, "Why did you let that go like that?"

"Why," she said, "I did not let it go. I read an article in the *Ladies' Home Journal* that lumps on the breast at my age were a serious thing, and I went to my doctor and I said, 'Doctor, I have a lump in my breast,' and he said, 'How long have you had it?' I told him I had it quite a while, and I noticed the article in the *Ladies' Home Journal* that said it was serious, and I came right to him. 'Well,' he said, 'has it grown any lately?' 'No.' 'Oh, well, forget it; that does not amount to anything.' "

"Well," she said, "I went to two doctors at least three times over a period of a year, and finally I discovered a lump in my axilla, and when I went to him he said, 'That is serious, you will have to go to a surgeon.' "

Now I might say that that is almost inexcusable ignorance, because a lump in the breast of a woman past 40 years of age is a foreign body. There is no evidence whether it is cancer or whether it is not cancer. It should come out. If it comes out and is found to be benign, that is cause for congratulation, but if it is found to be malignant you have got it as early as you can and the chances of cure are greater. There was really no excuse for that doctor because the woman came with the idea that it was serious. I cannot understand his psychology, except that perhaps a doctor dislikes to tell a woman she may have cancer.

Another example that is in point happened to be from the same town. He had a hopeless, inoperable rectal cancer, and I said, "How long have you had it?"

"Well," he said, "I have been treating with my doctor for 11 months, but the day before yesterday my doctor took me over to a surgeon, and he told me to come up here."

I said, "When did you find it?"

He said, "Ten months ago I had mucus and blood in my stool, and I went to the doctor, and he asked me to tell him what my symptoms were, and he said I had mucous colitis, and he gave me a prescription for it, and I took it and it did not do me any good. I told that to my doctor, and he said, 'You need local treatment. Here is a prescription for an enema, and you take it and hold it as long as you can.' "

That man had gone to that doctor for 11 months and never even had a rectal examination. That is a curious circumstance, and, as a matter of fact, in half of the rectal cases that come to our institute there has never been a rectal examination. Why it is that a doctor dislikes to make a rectal examination I do not

know, unless it is explained by the story I once heard about a doctor who challenged an English nobleman to a duel over some alleged insult, and the doctor happened to be a good swordsman as well as a crack pistol shot. The nobleman did not want to fight, so he sent word to the doctor that he would not fight him. The doctor said, "Why not?" He said, "It is below my dignity to fight a duel with a man who will stick his finger in another man's rectum for a guinea."

You cannot always blame these conditions on the general practitioner. I can cite the example of a woman who came with advanced cancer of the breast and was referred to the Institute, whose doctor recognized the condition and took her to a surgeon, and the surgeon asked the same questions about the breast as the doctor I told you about, among them—"Has it been growing any lately?" That is a most outrageous thing to ask them—in other words, wait until it does grow, wait until it does become cancer and we will do something about it. The surgeon said, "I do not think that is anything serious"—and he happened to be a surgeon who had been in the business a long time and did not need the money so he could take it easy and become conservative, so he said, "Let it go." Later, the doctor was not satisfied and took her to another surgeon, and the surgeon was about to go on his vacation, and he told her to come back after his vacation and he would look it over then. When she came back it was past any help that he could give. There were two surgeons who should have known better.

I will just tell you one more case that came into the Institute with carcinoma of the tongue and metastasis in the neck. The patient had consulted a skin specialist, the blood examination was made and was four plus Wassermann, and naturally, he decided it was a syphilitic ulcer and treated the patient for syphilis. Why he treated it so long I do not know, but he did not discover the condition until he saw the metastatic nodes in the neck. He was a man who should have known better, only he was thrown off by that four plus Wassermann reaction. If there had not been that Wassermann reaction, he probably would have thought of malignancy.

These cases were several years ago. I wanted to give you the worst of it first. Today we are seeing many early cases coming to us. Only last week we had three cases that were outstanding. One was a young man who had heard our talk on cancer, over the radio and he came in to see us. He had a little lesion on his cheek which he said bled easily and did not heal and had been there for three or four months. The dermatologist at the Institute looked at it and said, "It is a little benign affair but to make sure we will cut it out." Biopsy showed a basal cell epithelioma. Here was one that came in and got an early diagnosis.

Two patients from neighboring towns came in, sent in by their doctors for diagnosis—lesions on the cervix. Cervical cases are examined by three different men, our three most experienced clinicians on the staff. These two cases happened to be almost identical although they came from the different towns. The examining doctors agreed in both cases that, clinically, it was a benign lesion, no malignancy; however we make a biopsy of every case that comes in, and biopsy showed both these lesions to be malignant. Here was a case where the man could not make a diagnosis clinically that was shown histologically to be malignant. Both of those women will be cured. Both of those practitioners in those towns were on their toes with the thought of cancer in mind in sending them to a place where they could get proper diagnosis.

I might say a word about biopsy. There is some misunderstanding about biopsy. There are medical men who believe that biopsy is a dangerous procedure, but it is done by our staff on nearly every case. We have done biopsies on over 7,000 cases, and we have yet to observe any case where we thought it has been deleterious. I might say, however, that as soon as the biopsy is done, the proper treatment is administered. However, we have done research work in biopsy. We have cut into tumors, spontaneous tumors on our mice, cut out parts of them and studied them, and examination of these mice after death has not shown an increase in the existence of metastasis, nor have the tumors grown any more rapidly than the controls.

Similar work has been done by others, and I know a number of men engaged in cancer research who agree that the value of biopsy is much greater than the likelihood of any dangerous effects. Dr. Shreiner of our Institute, and Dr. Morton, Professor of Surgery at the University of Rochester, and Dr. Max Cutler of Chicago, have all gone on record at one time or another as saying that biopsy is extremely advantageous.

Now I think you will all agree that a disease that ranks second as the cause of death is a very important disease. You know that cancer takes off between 100,000 and 120,000 people every year in the United States. Many of these persons could be saved if earlier diagnoses were made; so that, if it is not of economic importance to us practitioners of medicine, certainly we are bound morally to lend our influence to this cause. It has been said truthfully, I think, that the ultimate fate of the cancer patient is in the hands of the first physician who sees him, and, if the doctor does not recognize his responsibility, the chances for saving life are greatly decreased.

Cancer is becoming a public health problem. A great many public health departments

throughout the country have adopted the cancer problem as a part of their work, based on the fact that it is a partly preventable disease, and, since chronic ulcers or benign tumors may become malignant, they are all in the preventive class and lend themselves to preventive medicine.

One of the reasons why many practitioners are pessimistic about cancer is because they do not believe it is a curable disease. I have had many doctors say, with a laughing air, "Boy, you never can cure cancer!" That is absolutely untrue, and anyone who has had any experience with cancer knows that the disease is curable. In the beginning it is a localized disease, and if entirely removed by surgery or radiation it is cured.

Each year the State Branch of the American Society for the Control of Cancer in New York puts on a series of five year cures of cancer cases, and this last year they had 75 cases from the physicians in Rochester who put on cases cured for five years or more. We have at the Institute records of cases that have gone over five years entirely free from disease and some as many as 15 years.

I should like to say just a word about etiology, for the reason that very frequently I go to the compensation courts, and I am surprised to hear doctors testify that they know nothing about the cause of cancer. Very often they will say that hitting this man in the abdomen with a wheelbarrow handle caused cancer, and the opposing attorney thinks he has caught the doctor and says, "You don't know anything about the cause of cancer. How do you know that the wheelbarrow caused cancer?" The doctor admits he does not.

I think we know a great deal about the cause of cancer; as a matter of fact, I think we know about as much as we ever will. If one says we know nothing about the cause of cancer and he means the intrinsic factor that causes the cell to take on excessive growth, that is probably true and maybe we never will know that. If we really do not know that about the normal cell, why expect to know it about the cancerous cell? But we do know a great deal about the practical cause of cancer, and we can produce cancer artificially.

You are probably familiar with the clinical examples of cancer being caused by chronic irritation, the frequency with which cancer appears in pipe and cigar smokers. Also the effect of chewing the betel nut in India and, where both sexes have this habit, cancer is as common in the mouth of women as it is in men, while in countries where this is not common, cancer is found 95 per cent in men and only 5 per cent in women. Aniline workers are frequently subject to cancer of the bladder due to the irritation of aniline products. The chimney-sweeps of England had cancer of the scrotum so frequently it was given that name, "chimney-sweeps' cancer of the scrotum". I might go on and tell you a lot of clinical examples of cancer being produced by chronic irritation or chronic insult to a group of cells over a period of time.

We can produce cancer artificially in the stomach of rats by feeding these animals with the embryos of nematodes. Bullock and Curtis produced sarcoma in rats by feeding the eggs of the cat tapeworm. Also, cancer can be produced by x-ray by treating animals, rats especially, over the back for a long period with small doses of x-ray every other day for a period of many months. These methods are all different. You have your purely physical method by x-ray, you have your chemical method, you have your biological method by the use of nematodes, and they are all connected with chronic irritation.

As a matter of fact, all people that smoke pipes and cigars and cigarettes do not have cancer of the lip. All chimney-sweeps do not have cancer of the scrotum. All people that chew the betel nut do not have cancer of the mouth. So there must be some other factor, and that factor is an inherited tendency, perhaps—the tendency of cells to react against these irritants by excessive growth which we call cancer. So there are added factors. There is the factor of the quality of the cell which reacts against an irritant.

That might be illustrated by taking three cases. One smokes a pipe excessively and gets cancer of the lip; his brother has the same kind of cells but does not smoke and never gets cancer; the third person smokes his head off and does not get cancer.

I believe that the practical cause of cancer is chronic irritation of some sort. Many times it is so subtle we cannot lay our finger upon it. We speak of the constantly irritated cell as the practical cause of cancer. It is practical because, if in a great many cases we can remove these chronic types of irritation, we can thereby prevent cancer.

Your President, when he asked me to speak before you, wanted me to tell you briefly something about how New York State attacks the cancer problem, inasmuch as your Legislature has recently appropriated money and your Medical Society has a committee to handle the cancer problem. Therefore I will say a few words about how New York State attacks the cancer problem.

We have three factors, all of which you have here, of course. We have the State Board of Health with a division of Cancer Control. We have a branch of the American Society for the Control of Cancer. We have the New York State Medical Society's cancer committee. These three agencies try to work in conjunction with each other and not overlap.

New York State was the pioneer state in the approach to the cancer problem. I told you something about Dr. Park getting Governor

Black to have the Legislature appropriate some money. That was back in 1898. It was the first institute for the exclusive study of cancer to be established in the world, and since then has grown constantly so that we have the Cancer Institute, which is composed of a laboratory building in which we have a biological department, a pathological department, a chemical department, and a physical department. We have also in the hospital, for the treatment and diagnosis of cancer, two x-ray therapy machines and nearly eight grams of radium. We have in an adjoining town a biological station where most of the animal experimentation is done.

To this Institute any cancer patients of the state may come either for diagnosis or treatment without cost. We also have a free pathological diagnostic service. Any doctor in the state can send his specimen for histological diagnosis. Last year that amounted to specimens from over 14,000 patients. The first year there were not quite 900 specimens.

This free service is approximately a 24-hour service; that is, from the time the surgeon sends his specimen in to the Institute to the time he receives his report will be about 24 hours, and if he wishes a telegraphic or telephonic answer he can get that. This is a free service to the physicians.

At the present time the State Institute is under the Department of Health as a separate department and is one of its subdivisions. The Department of Health also intends, through its Division of Cancer Control, to establish tumor clinics at strategic points throughout the state, either diagnostic or complete clinics for treatment.

The State Branch of the American Society is well organized and carries on educational propaganda among lay people. The New York State Medical Society operates chiefly by stimulating the county societies to give a certain amount of time to the discussion of the cancer problem. They also stimulate the medical societies to have appropriate courses in malignant disease, and are also coöperating with the other agencies in the establishment of tumor clinics.

New York State is conveniently divided into what we call the Upstate and the Metropolitan District. The city looks after its own details. It is about equally divided. Greater New York has about 7,000,000 people and Upstate has 7,000,000. We have Upstate now three complete tumor clinics, one at Buffalo—our Institute—one at Rochester in connection with the University of Rochester, and one at Albany—the Memorial Hospital. At these places they have complete tumor clinics where group diagnoses are made. A number of men have united under a leader to hold clinics once or twice a week for diagnosis to determine what treatment shall be given to a patient.

Now I think you gather from what Dr. Quick has told you that cancer is no longer a one-man disease, that is, a single man cannot control the entire field. Even surgeons who are qualified to treat with radiation confine themselves to but one special field, so that today cancer is considered a group problem. The primary group should be composed of a surgeon, a radiologist, a pathologist, and then as many more specialists as possible. These men group together somewhat as they do in Massachusetts, about which I think Dr. Daland will tell you something. The State of Massachusetts has gone far ahead of others in the establishment of tumor clinics. I hope in his discussion he will tell you something about that, so I need not take your time with that.

The requirements of these tumor clinics are primarily a surgeon and surgical facilities, including not only operative surgery but electrodiathermy and deep x-ray therapy with a machine capable of delivering 200,000 volts, and radium.

The question of radium has come up, and that is the bugbear to general hospitals because as a usual thing they have an insufficient quantity or no radium, but it has been decided that a minimum amount of radium would be 200 milligrams in the form of a salt. It is quite possible to buy this salt from chemical companies so that it is available to any hospital.

It is my belief that every community, that is, a certain area, should have a complete cancer clinic. I mean by that, not only a diagnostic clinic but facilities for treating cancer from these three standpoints—surgery, x-ray, radium, and that such a center in your state here would be extremely valuable to the people of your community.

### Discussion

Dr. Ernest M. Daland, Boston: So much has already been said on this subject that all that is left for me is to present a few random thoughts. The first night that I was in medical school, optimism reigned. The professor of histology in speaking to our class said, "You men have entered medicine at a very interesting time. Within a few days the cure of cancer is to be announced." So at that time they thought they were going to make a positive announcement.

Speaking of rectal examination reminds me of a statement that a patient made to me yesterday, that she was not going to stay in the hospital any longer—she had three doctors put a finger in the rectum and her bowels had not moved yet, and what she wanted was some pills.

I agree with Dr. Simpson's statement about biopsy for the most part, but I do not think we should carry away the wrong idea about biopsies, particularly in breast cases. He pointed out that, if biopsy were done, appropriate treat-

ment must be carried out soon after. It is not sufficient to cut into a breast, send the specimen away, wait several days for the report and then try to do the radical operation. A study of large groups of cases, where this has been done, shows the number of cures to be extremely low. We feel that it is advantageous that both be done at the same sitting if possible.

One piece of work was done by Dr. Tyzzer at the Harvard Medical School which showed that manipulation of tumors did cause metastasis. It was done on mice with proper controls. The tumors were explored and massaged and the animals were later autopsied. It was proved that many of the mice in which the massage had been done did show metastasis.

The earliest treatment of a breast tumor I have seen was in a patient who came to me about a month ago and said that when she awoke that morning her hand casually went across her breast and she found a tumor. She got up and got her breakfast, called up her doctor and went to see him at 9 o'clock, saw me at 2 o'clock and went to the hospital at 5 and was operated on the next morning. If all patients would act as quickly as that the results would be different.

The ideas expressed by Dr. Quick, as existent at the Memorial Hospital in New York, very closely accord with our ideas in the treatment of malignancy. More and more we are using radiation in connection with our surgery. The Memorial Hospital has undoubtedly led other parts of the country in the efficiency of its radiation work. I think we are gradually attaining some of the efficiency they have taught us, and we are using radiation more and more.

As an example, in cancer of the cervix uteri we are treating all cases with radium, and of late we are combining the radium treatment with x-radiation. We find we save time and save discomfort on the part of the patients if we keep them in the hospital for a week, getting the discharge cleaned up with frequent irrigations, and then giving them deep therapy and a radium treatment. It is quite surprising to see how the lesion cleans up during that period with x-radiation so that when the radium is applied in some instances it is pretty difficult to find the exact location of the growth.

In some of our mouth cases we are using preoperative radiation as Dr. Quick is using it. The practice is followed with many patients, such as patients 60 or 70 years old with cancer of the tongue or cheek. A question arises as to how much to do. It is certainly not wise to put the patient through a double operation at the same sitting, that is, an excision of the cancer of the tongue and a radical neck dissection. It certainly is unfair to the patient to put him through a radical neck dissection and let the primary lesion wait. I have seen patients who have been through the primary neck dissection who never were able to take an anesthetic to have the primary lesion removed. So, of late, our practice has been to keep the patient in the hospital for a few days under the care of the dentist in cleaning up the teeth, getting out the old snags, giving mouth washes and cleaning up the lesions so far as possible, and then going ahead with our operative or radium treatment. We have been giving more and more radiation in the tongues and cheeks and then giving x-ray treatment during the time when they are convalescing from the mouth operation.

We have used electrosurgery a good deal in mouth lesions. I think that for the floor of the mouth and in some cases in the tonsil region, it is a very good method of treatment, and yet it does not quite produce the results, and so, grasping at a straw, we frequently use radium along with the operation, that is, inserting radium seeds around the periphery of the coagulated lesion. I am sure the results are better than they were in using surgery alone.

We still feel that neck dissection is advisable if it can be done with safety to the patient. In a number of serious cases we have studied, we have found there is a variation in one way or another of about 20 per cent in palpating glands. When we see a patient with cancer of the lip we palpate the glands and remove them, and we find that 20 per cent of those palpated glands are inflammatory. We see another patient with cancer of the lip without any glands, we do the routine neck dissection, and the pathologist reports cancer in the glands, so that palpation is not the only resource in determining what should be done with the glands.

We still believe that operation on lip cases is preferable to radiation. Our routine procedure is to do an excision of the lesion of the lip with dissection of the submental and submaxillary glands on one or both sides. This dissection need not be radical in that it does not need to remove the sternomastoid muscle or internal jugular vein, but in submaxillary dissections we carry it back so that the angle of the jaw and the tip of the parotid is fully exposed. There is a gland back at the angle of the jaw which is the upper one of the deep cervical area and this should be removed. It is almost constantly present. It may not be malignant but it is an important consideration in dissection of the neck. If that gland is involved a more radical dissection must be done, including removal of the internal jugular vein.

For cancer of the breast we do not, as a rule, use preoperative radiation. At the Massachusetts General Hospital we have conducted two series of cases, one series of 50 cases taken in sequence given preoperative treatment followed in about a week by radical operation, and the next 50 cases treated without preoperative ra-

diation. We had hoped to compare these two series of cases but as the time approaches to get the results together the radiologists tell us that the radiation used was not efficient and they do not think the results will show up particularly well, and the radiologists also feel now that it was a mistake to operate at the end of one week after radiation, and that six weeks would have been a better interval. As a rule, we are not using preoperative radiation. Occasionally a case turns up that is a borderline operative case and we do use it.

I recently operated on a patient of this type. She came to us with a big ulcerated lesion on the breast. Cultures from that lesion showed streptococcus hemolyticus. She showed glands which we thought were inflammatory. She was given deep radiation and, at the end of six weeks, a radical operation was done. At that time the wound was sterile, or, rather, there were no streptococci present. She went through treatment without any wound infection, and microscopic examination showed no glands in the axilla. I think it would have been rather too bad not to have given that woman the chance of a radical operation, yet I feel that, if we had done a radical operation in the first place, we would have had a disaster.

We agree with the radiation treatment of most skin cancers, with the exception of cancer of the ear which we have found does not do particularly well with radiation. The cartilage of the ear is so close to the skin that a sufficient amount of radiation to destroy the cancer will cause trouble and quite bad symptoms for many weeks.

We have had other patients with cancer on the dorsum of the hand who have not stood radiation well. Some of them develop synovitis which has kept up for a period of many weeks. We are quite likely to do excision of lesions on the dorsum of the hand or on the ear.

Dr. Quick spoke of the operative treatment for cancer of the fundus, and we agree with him that it is a much more sane proposition than radiation, and yet at the Huntington Hospital we have recently studied a group of cases where we have used radiation upon patients who were not good operative risks and had been sent there for radiation, and much to our surprise in going over our cases we found a very high percentage of cures. However, from choice, we would do a complete hysterectomy rather than give radium.

Cancer of the ovary is another lesion where radiation can be of great help along with operation. There are cases of cancer of the ovary with involvement of the peritoneum where surgery is not possible, with the exception of taking out the diseased ovary, but where radiation as a postoperative measure is of great help. We have a patient who is now alive and well 10 years after radiation was given, at which time the primary growth seemed inoperable. The operation was done and the biopsy made. The patient was sewed up. Both ovaries were taken out. She was given radiation, and two years later the surgeon found an encapsulated tumor which was removed.

I feel that the doctor's obligation to cancer patients is a serious one, and it has come to me more and more that one of the great influences for helping the whole cancer situation is a little more frankness and truthfulness on the part of the doctor. At the State Hospital in Massachusetts we see many advanced cancer patients. They are patients who have been passed around from one hospital to another, from one doctor to another. Many times they have been deceived by being told they did not have cancer, and we have to deal with them during the late stages. It is my feeling that the average person will coöperate very much better if you talk frankly with him in the first place. He says, "Is this thing in my lip cancer?" I think we should say, "Yes, it is cancer; but these cancers are not so bad as certain other cancers; this is a type of cancer that we usually can cure if we go right after it." I think we should lay the cards on the table and tell him what must be done and what to expect. You will find that the patient will go through with the operation and come back for the regular follow-up and watch for a recurrence carefully himself, and if recurrence does appear he is going to come quickly for further treatment. On the other hand, he is going out into the community to help spread the gospel that all cancers are not terrible things. "I had a little thing on my hand or on my lip," he will say, "and they said it was cancer and they took it out, and now I am well." He is spreading the gospel among those with early lesions to come to the doctor and not wait for fear they may be cancer.

Medication in cancer is another thing. We see so many people that are taking three or four grains of morphine a day because the doctor has told them to do it. I realize this is a difficult proposition in a private home, but most of these people do not need morphine, and after a week or two we find that they get along perfectly well with aspirin or codeine. We find that many patients with ulcerated cancers of the breast respond very readily to careful surgical dressings, and frequently I have seen the pain gradually pass away so that morphine is not needed.

Just a word about the Massachusetts state program. The state has a cancer hospital, a central hospital located about 25 miles south of Boston, where we have 120 beds. The only requirements for admission to this hospital are that the patient shall have cancer or suspected cancer and shall be recommended by a doctor. Anybody who is a resident of the state for two of the last three years is eligible for admission. We have to keep patients in the hospital as long as they need hospital care, and in that

way our hospital differs a little from Dr. Simpson's in that he does not have to keep advanced patients if they cannot be helped by treatment.

We also have numerous clinics, 15 in number, throughout the state where people can go for early diagnosis. In some instances treatment can be given at those hospitals, and in other instances the patients are sent to a general hospital or to the central state hospital. These clinics throughout the state are all organized in previously established general hospitals. A group of men in the particular hospital who are interested in cancer get together for the study and the treatment of the cancers which come to them from the hospital. Cases that need radiation, if they cannot get it at their first hospital, are sent to the Pondville Hospital for appropriate treatment.

The state also maintains a free diagnosis bureau, copied after that one at Buffalo, so that doctors throughout the state can get a free diagnosis of any suspected malignancy.

I have a few slides which I should like to show. These deal with the results of cancer of the lip treated, mostly, at the Huntington Memorial Hospital. This is a study of the Huntington lip cases. Many of the present cases have not been done at the Huntington Hospital, but have been sent to the Massachusetts General. This is not a complete study of the lips at the Massachusetts General but only of those cases that originated at the Huntington Hospital.

[Lantern slides.]

Dr. James W. Jameson, Concord: I feel that we are very fortunate in having had the subject of cancer so well covered as we have in this Symposium this afternoon.

There is good reason to feel hopeful for the future control of cancer when we learn how much has been done and is being done along various lines of research, when reports show an increase in a percentage of cures in many cancer cases.

Treatment by radium has changed the picture in many malignant conditions, and especially in carcinoma of the cervix when, formerly, extensive operations attended with a high mortality have been supplanted by a treatment in which there is little danger and more satisfactory results.

As the results of treatment depend to a great degree on the early diagnosis of cancer, it is important that the public should be instructed in the necessity of examination and that the doctors do their part in giving patients proper treatment and advice, not losing sight of the fact that any lump is an abnormal condition and should be considered serious until proved benign.

A careful microscopical examination should be made of any growth removed, even if it has the appearance of an innocent tumor, as not infrequently a recurrent growth is malignant, when the primary growth was apparently benign. Biopsies are not infrequently done for diagnosis and, when they are, I think it is much wiser to remove the entire growth if possible rather than take a section from it in situ.

In New Hampshire, people are becoming more interested in the study of cancer problems, and, as our President has said, the appointment of a State Cancer Commission by the Governor is a step in the right direction. The active coöperation of the medical men in this State will be most helpful to the commission, and I am sure we all want to do our part. Recently a questionnaire was sent to forty-one institutions in this State and from nine no reply whatever was received. From fully one-fourth of those who did reply there was no definite diagnosis of cancer in the reported cases.

Only by accurate diagnosis and careful study and treatment can we hope to make the necessary progress toward the eradication of cancer, which is the result we are seeking.

## MISCELLANY

### NEW MEMBERS

Dr. George E. Prevost, Walpole, graduated Tufts College Medical School 1929, licensed 1930.

Dr. Philip B. Daniels, Keene, graduated University of Vermont 1930, licensed 1932.

### REMOVAL

Dr. Arthur W. White has moved from Durham to Franklin.

## RECENT DEATH

**MURRAY**—Dr. John T. Murray, one of Manchester's best known and oldest practicing physicians, died at his home, 64 Ash Street, Manchester, New Hampshire, on December 16.

He received his M.D. degree from Baltimore University School of Medicine in 1898.

# HEALTH EDUCATION IN THE CITY OF BOSTON*

BY RUTH I. PARSONS, C.P.H.,† AND C. E. TURNER, DR.P.H.†

## I. INTRODUCTION

HEALTH Education for the purpose of this study includes those systematic, continuing, or organized procedures, the primary purpose of which is to improve the health attitudes, behavior or knowledge of individuals or of groups. It does not include the training of professional workers in the field of public health. The area studied has included only the City of Boston proper.

The aims of this survey have been threefold:

1. To determine what agencies are carrying on Health Education in the city.
2. To determine the quantity, quality and adequacy of the work which each is doing.
3. To suggest ways of strengthening the present program of Health Education.

In accumulating the data, the Commissioner and each division-head of the Boston City Health Department were interviewed, and visits were made to Health Units in representative areas. The executive directors of the Boston Tuberculosis Association and of the Community Health Association were interviewed, and the surveyor visited the various health education projects being carried on by these groups. Contact was made, and in most cases by a personal conference, with persons responsible for health-education services in medical institutions. The social and welfare agencies, many of whom carry on some health education activities in connection with a broad program of welfare work, reported their activities in answer to a form letter, inquiring what health instruction is given either directly to individuals or groups, or indirectly through the distribution of health literature or by other methods.

Through the courtesy of the Superintendent of Schools and the Supervisor of Health Education, it was possible for the surveyor to visit classes in twenty public schools scattered over fourteen school districts; and in addition to interview directors, masters, nurses and others directly and indirectly concerned with health education in the Boston Public Schools. In a similar manner, the Supervisor of Parochial Schools made it possible for the surveyor to visit seven of the schools supported by the Catholic Church in Boston.

Data concerning organizations whose field is broader than the City of Boston, but which contribute directly to health education in the city, were collected through personal interviews with the respective executive directors.

In every case, the statement has been forwarded to the director of the organization concerned for additions and corrections. The courtesy and coöperation of all these people is genuinely appreciated.

## II. ORGANIZATIONS IN BOSTON CONTRIBUTING TO HEALTH INSTRUCTION FOR THE GENERAL PUBLIC

### A. Governmental Agencies

#### 1. *Boston City Health Department*

The City of Boston is to be congratulated upon having a Mayor and City Council with vision and interest in public health matters, and with a recognition of the value of health instruction. The support which the city government has accorded to health-promotion activities of the Health Department is to be heartily commended.

There is in the Boston City Health Department no special division of Health Education, nor, at the time this study was begun, was any one person responsible for the program. The work in the Health Units and the work of the Nursing Service represent its two most important means for educating people in healthful living. Three other divisions of the Health Department—Sanitary, Dairy, and Food Inspection—are chiefly concerned with law enforcement, although a great deal is often accomplished by teaching persons the reason for changing their poor practices, without need for prosecution. The work of the Medical, Communicable Disease and Tuberculosis Divisions has important educational values which are incidental to the services rendered. The contact of the Laboratory Division is chiefly with physicians. The Division of Vital Statistics determines and makes public facts concerning the prevalence of disease, and compiles graphic summaries of statistical data. Health education in

*This study was made by the Health Education Research Laboratory of the Massachusetts Institute of Technology at the request of the Boston Health League and with the coöperation of the office of the League and its Health Education Committee consisting of J. Mace Andress, Editor "Understanding the Child"; Editor, Health and School Department of "Hygeia"; Bernice W. Billings, Executive Secretary, Boston Tuberculosis Association; Alice F. Blood, Director, School of Household Economics; Professor of Dietetics, Simmons College; Mabel C. Bragg, Assistant Professor of Education, Boston University School of Education; Marjorie L. Foster, Nutrition Director, New England Dairy and Food Council; Curtis M. Hilliard, Director, Department of Biology and Health, Simmons College; Jean V. Latimer, Educational Secretary, Massachusetts Tuberculosis League; Florence M. Patterson, Director Community Health Association; Reverend Richard J. Quinlan, Diocesan Supervisor of Schools, Boston, Mass.; Frances Stern, Chief of the Food Clinic, The Boston Dispensary; John P. Sullivan, Supervisor of Health Education, Boston Public Schools; Margaret H. Tracy, Executive Secretary, Boston Health League; C. E. Turner (Chairman); Charles F. Wilinsky, Deputy Commissioner Boston Department of Health; Director, Beth Israel Hospital. This study was made during the school year 1931-32.

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relation to three of the Departments will be discussed here in some detail; namely, (a) Health Units, (b) Nursing Service, and (c) Publications.

a. Health Education through Health Units:

(1) Direct Health Instruction.

(a) During 1930 there were arranged in each of the seven Health Units two public lectures on health subjects. The lecture, given by a physician of the Health Department Staff, was usually supplemented by a moving picture borrowed from the State Health Department or from some other organization. The director estimates that a total of approximately 3,000 people attended these lectures. Publicity was secured through the nurses in their home visits, by means of posters, and by announcements made at clinics and conferences in Health Units.

(b) Health posters obtained from various outside sources have been exhibited in waiting rooms at all of the seven Health Units.

(c) With the coöperation of the Community Health Association, a Mothers' Club has been organized at each Health Unit. Weekly meetings of the club are attended by expectant mothers in the district. They may bring young children who are cared for by a nurse during the class. During 1930, 314 of these meetings were held. The average attendance was twelve. (For detailed description of the program, see subsequent section dealing with the Community Health Association.)

(d) Once a month, mothers of those children who attend solarium classes on the roofs of Health Units are invited to a luncheon. Following the meal, they are given instruction, both as individuals and in groups, in the home care of these children, all of whom are under par physically, and many of whom are tuberculosis contacts in the home. These mothers' classes are taught by a health department nurse, nutritionist or physician. Attendance is compulsory, and continued failure of parents to attend may be considered sufficient reason for excluding the child from solarium class. An exceptionally good piece of specific health teaching is being accomplished here. During 1930, 24 such meetings were held in connection with the solaria. The attendance was 364.

(e) Physicians who are associated with Health Units give talks to various groups within the district — such as Parent-Teacher Associations, Women's Clubs, or Professional Societies. No record of the actual number given during the year is available.

(f) Opportunity is taken to announce and explain new activities (for example, a diphtheria immunization program) to groups who assemble for clinics.

(g) From time to time, posters are placed on the walls of the waiting room for children who are brought to dental clinics.

(2) Incidental Health Instruction.

(a) Pediatricians and nurses give some incidental instruction during the examination of children at these well-child conferences — 31 of which are held in the city each week. The total number of conferences in 1930 was 1,538 with an average attendance of 44. Two physicians with the help of six nurses examine the children in attendance within a two-hour period. The educational aspect of this activity is not stressed, however, due to lack of time.

(b) During 1930, with the coöperation of the Boston Lying-in Hospital, 303 prenatal clinics were held at Health Units. The total attendance was 3,510. Follow-up is in charge of Community Health Association Nurses and is accomplished at Mothers' Clubs as well as in the home. All of these activities are educational as well as clinical in nature.

(c) The usual difficulty has been encountered in persuading well people to come for examination, for the majority of persons who have requested this service have been clinical cases who have lapsed treatment at hospitals, rather than apparently normal individuals who are interested in promoting positive health. About 1,000 examinations have been given during the last year. Some useful information has been given to individuals examined, but education activities would be more successful if examinees were well people seeking information concerning hygienic living.

(d) During the summer, with the coöperation of the School Department, playground teachers work with children in the yards adjacent to the Health Units. Here some health teaching is accomplished by means of posters, games or other activities.

b. Health Education through the Nursing Service:

The health department nurses, for whom a generalized program was inaugurated in 1926, are doing a splendid piece of educational work. In this they coöperate with the Divisions of Child Hygiene, Communicable Diseases and Tuberculosis.

In 1930 the staff, consisting of the director, 12 supervisors, 126 field nurses and two nutrition workers, made 214,711 educational visits to homes for the purpose of:

(1) following-up reported cases of tuberculosis,
(2) making contacts with homes of children in attendance at Health Unit solaria,
(3) monthly follow-up of children registered at Well-Baby Conferences,
(4) teaching facts about quarantine, isolation, disinfection or other phases of the control of cases of communicable diseases which had been reported by that division,
(5) follow-up of children in parochial schools and day nurseries who are absent because of illness or who need to have physical defects corrected. At these visits, any worth-while, pertinent material (pamphlets and bulletins) which has been obtainable from other reliable sources, as well as that published by the City Health Department, is distributed.

The nurses are assisted in solving problems of nutrition by two nutritionists who offer a consultant service in this field. They also supervise the diets of children in the solaria, and assist in arranging luncheons for the mothers of these children at their monthly meetings.

Three of the regular staff nurses are always on duty at the Health Unit solaria. These roof classes are really nursery schools with special modifications to care for the health of children. Health habit training is an important part of their daily program.

Health Department nurses make regular visits to 47 of the 48 parochial schools in Boston, to fifteen day nurseries, a kindergarten, and an institution caring for children.

c. Publications:

(1) *Annual Report.* This is a statistical summary of activities prepared for record purposes. About 200 copies per year are printed and distributed to persons and organizations who request them.

(2) *Monthly Bulletin.* This contains a brief summary of the work accomplished by each division during the preceding month; articles concerning current health problems in Boston and excerpts from scientific journals. Approximately 2,300 bulletins per month are mailed to physicians and others who request this service. (The publication of the Monthly Bulletin was discontinued in October, 1932.)

(3) *Pamphlets.* The Division of Communicable Diseases keeps on file some 15 pamphlets relating to reportable diseases and their control. These are distributed to homes where cases of such diseases are reported. The Dental Director has compiled two leaflets on the care of the teeth. These are given to children who attend Health Unit dental clinics.

## B. Voluntary Agencies

### 1. *Health Societies and Associations*

a. *Boston Tuberculosis Association.*

Among the objectives of this organization are two which relate definitely to health education, namely,

"To give information concerning tuberculosis to the general public; to teach children habits of health so as to avoid tuberculosis; and to give doctors and nurses the latest and best methods of diagnosing and treating tuberculosis.

"To maintain a Preventorium in the City of Boston, where children who have been exposed to tuberculosis and who are the future candidates for this disease may become so built up physically and so trained in hygiene that they will ward off tuberculosis in the future."

The Association is endeavoring to accomplish these aims through the following activities:

(1) A motion picture depicting the work of the various agencies in Boston in combating tuberculosis. This film was shown during 1930 at ten theaters to an estimated audience of 28,000 persons as well as to 63 special groups such as women's clubs, social and welfare agencies, churches, medical societies, and before nurses, teachers and school children.

(2) Lectures. Members of the staff and other health workers volunteer their services for lectures. Four hundred and seventy-four talks on tuberculosis and other health topics were given during 1930.

(3) Radio Talks. Through the coöperation of a radio station in Boston, a series of ten-minute radio talks on health topics has been arranged by a group of interested physicians.

(4) Newspaper Publicity. Radio talks were later published in Boston newspapers. Other newspaper publicity during 1930 totaled 1,318 inches.

(5) Information Service. The Bureau of Information receives approximately 800 inquiries during a year, by telephone, letter, and personal interview. It also distributes literature on the care of the tuberculous patient in the

home and on the prevention of tuberculosis. Much valuable educational work is accomplished through personal contact with people who visit the executive offices.

(6) Special Projects. Two special health education projects have been undertaken recently: one among the Negro people in Ward 9; the other in connection with the Sheltered Workshop.

The former has been going on since 1928. Under the direct supervision of a public health nurse, interest has been aroused in improving living conditions. Through the stimulus of a yearly Back Yard Improvement Contest, much has been accomplished by the people in this district toward providing a more beautiful, healthful, and sanitary home environment. The Neighborhood Get-Together Club, composed of women who are graduates of home nursing classes, has, in April of each year, sponsored Negro Health Week, during which such activities as special lectures, demonstrations (for example, a model furnished apartment and improved back yard) and a health play are arranged. The Tuberculosis Association offices are utilized by these people for group meetings, health talks, home nursing classes, and lectures. During 1930, eighty such meetings were held with a total attendance of approximately nine hundred.

In Tyler Street, in an unused schoolhouse, lent by the City of Boston, a Sheltered Workshop has been established where from 30 to 40 men and women who are convalescing from tuberculosis go through a training period of work in preparation for regular full-time jobs later on. They are under close medical supervision and do their work according to a hygienic program of good food, rest, and recreation. Lectures and talks by physicians, nurses or other trained health workers add to their health knowledge. It is planned in the near future to begin a health education project similar to that in Ward 9, among the people (especially the Chinese) who live in the vicinity of the workshop.

(7) Prendergast Preventorium. In Mattapan on a beautiful tract of land, 27 acres in area, is an institution which shelters about one hundred boys and girls between the ages of 5 and 12. None of these children are active cases of pulmonary tuberculosis, but all have had contact with cases in the home. Funds have been available to keep forty of these children during the whole year, and the remainder only through July and August. Some families are able to pay a little toward the cost of board of the children, but in the majority of cases, the entire expense is borne by the Association.

During their stay at the Preventorium, the children live under a hygienic program of habit-training. By assisting with light household tasks, they are made to feel a responsibility for their conduct which is carried over into the home after their return. One mother, living in a tenement house, required several hours' persuasion before she would consent to allow her daughter to attend Prendergast during a *second* summer, because of the revolution in household management which had thus been inaugurated at home.

Three teachers from the Boston School Department conduct regular graded classes in out-of-door school rooms at Prendergast. Special classes for the older groups provide instruction in Home Nursing (sponsored by the American Red Cross) and cooking (with emphasis on nutrition) for girls, and First Aid and Manual Training for boys. All of the teachers feel it a part of their responsibility to instruct these children in the fundamental rules of health, hygiene and right living, so that they may return to their communities, not only in an improved condition physically, but also fortified with a knowledge of how to preserve and maintain good health.

The Association provides for follow-up of these children after they have been discharged to their homes. During 1930, 596 of these educational visits were made by a public health nurse.

Inasmuch as many of these mothers request information about the preparation of their children's food, sixteen cooking classes were held by the Preventorium dietitian in 1930. The average attendance was ten.

Education for parents is also accomplished through the special Sunday afternoon meetings at the Preventorium. Fathers and mothers are eager to see the short programs put on by their children and to hear a talk by a member of the staff on some phase of Child Care. Parents' meetings are also held at the office from time to time.

b. *Community Health Association.*

The Community Health Association—founded in 1886 as the Instructive District Nursing Association—is a charitable organization "for providing Boston with trained nursing service and health supervision". At present it has a permanent staff of 150 registered nurses (all of whom have had special training in public health), seven nutritionists with college degrees in this field, and three mental health workers with nursing or college degrees plus special training in mental hygiene. Patients pay the organization what they are able; if possible, the actual cost of services rendered. About half of the annual budget of nearly $400,000 is supplied from subscriptions and endowment.

Although the 353,473 home visits made in 1930 were primarily for the purpose of giving bedside care to medical, surgical, chronic, contagious, pre- and postnatal, and infantile paralysis cases, nurses took special care to make them also educational. Nearly every home offered an

opportunity for giving information and advice concerning some phase of home hygiene and sanitation as well as personal health.

Each year more than one-third (6,500 in 1930) of all the women in Boston who give birth to babies receive prenatal supervision and instruction from the Community Health Association. Contacts are established through physicians, social agencies, churches, hospitals and city Health Units. Nurses make home visits monthly during the early part of pregnancy, and later bi-weekly. The mothers are also invited to attend weekly group meetings held at twelve district offices, seven of which are established in Health Units.

The program at such meetings consists of the following:

(1) individual conferences with a nurse who offers timely advice and conducts a bi-weekly check-up (weight, blood pressure and urinalysis),

(2) a series of ten talks, often illustrated, given by a nurse, nutritionist, psychiatric social worker or physician—on such subjects as Pre- and Postnatal Care, Foods, Budget, Time Schedules, Cleanliness, and Mental Health,

(3) distribution of mimeographed sheets containing the salient points of each talk, which when collected, constitute a reference manual of useful material on the care of the mother and her baby,

(4) simple refreshments consisting of some food with which many of the group are not familiar, and supplemented by a discussion of its value and preparation.

The value of these Mothers' Clubs as an educational procedure cannot be overestimated. The information is presented at a time when the women are in a receptive mood and feel the need for it. The mothers show a great deal of enthusiasm and many return to hear the series of talks two or three times. The enjoyment and stimulation, which they derive from group discussions are especially beneficial.

The nurses are being assisted in developing the educational aspect of their work by the nutrition, mental hygiene and social hygiene workers. These special groups function through two channels: first, helping the nurses to recognize and correct nutrition, mental, and social problems as they appear in the home (this is being accomplished by holding classes for groups of nurses and by accompanying individual nurses on their daily rounds), and secondly, by investigating individual cases referred to them by nurses. Through the coöperation of the nutritionists, families are aided in budgeting their incomes and are taught elementary dietetics and food facts. The mental health workers assist the nurses in helping patients to maintain a normal mental attitude and better social adjustment. All personality or behavior problems involving pathology are referred to psychiatric clinics. In an effort to meet the need for better sex character training and family adjustments, one worker is at present devoting her entire time in the field of sex hygiene and parental education.

### 2. *Medical Institutions*

It is a well-recognized fact that *all* hospitals and physicians everywhere, in addition to their remedial service, are accomplishing a great deal toward teaching individual patients how to improve and to maintain health. The following medical institutions also carry on definite health education activities in connection with out-patient departments.

a. *Beth Israel Hospital.* In the Out-Patient Department, the chief of the Food Clinic and her assistant dietitian plan individual diets for patients, referred from the Medical Department, who require food therapy as a part of medical treatment. They give instruction in food preparation when necessary. They also place posters on the walls of the corridors in the Out-Patient Department. In previous years Health Week has been observed by lectures and demonstrations on preventive medicine and child care to waiting patients. The end of the week has been marked by a Children's Health Party. Although the hospital staff members — especially those in the Out-Patient Department—are interested in health education, they have not as yet sponsored a continuous program.

b. *Boston City Hospital.* Each morning in the week, except Saturday, a volunteer worker has a class in health for children who are in clinic waiting rooms. This consists of story-telling and handwork. There are no definitely planned lessons, but much health information is given in this way. An average of one hundred children per week are reached.

The prenatal patients (400-500 per month) are given individual instruction by physicians, nurses, and social workers at clinics. All mothers with whom the department comes in contact are referred to the Community Health Association for follow-up and home instruction.

c. *Boston Dispensary.* During the past ten years the Boston Dispensary has been carrying on, with increasing intensiveness, a program of health education for its patients, — especially the child patients. The program is in charge of a full-time health educator, who is assisted on Saturday mornings by four teachers from the schools of Metropolitan Boston and on other days by volunteers. The time used is the period of waiting before the patient can see the doctor.

The walls and convenient floor space in several of the clinic waiting rooms are used to illustrate and emphasize health principles and to give health information to the waiting patient. Exhibits, demonstrations, posters, and

pictures, procured from near and far—in this country and abroad—and carefully judged for their value to health education, are placed advantageously. Furnishings are made attractive and colorful to encourage cheerful and interested mental attitudes.

For the child patient there is a definitely planned health lesson each week. As early as possible the health educator sends to the teachers the lesson plan for the Saturday morning classes in the clinic waiting rooms. She also assembles illustrative materials, suggests stories, games, handwork, and other means of reëmphasizing important points and making the presentation more vivid. Preceding the lesson period the teachers meet in conference with the health educator and others for discussion of matters pertaining to the work. From 75 to 100 children may have the opportunity to hear the lesson given on Saturday mornings. With the help of volunteers the lesson is given to smaller groups attending the clinics during the following week. Children are present for varying periods of time, but by arranging a lesson that is composed of several units, a fundamental truth can be impressed in a few minutes.

Adults are often attentive listeners to these talks with children, and child health education merges into adult health education.

The Mothers' Meetings, held once a month through the school year, are made a true means of teaching the mother the standards of child health. The subject matter of these meetings is the same as that used in the talks for children with adaptations for the older group; and with the mothers as with the children, methods of visual education are employed. To help the attendance, mothers are urged to bring with them their preschool children, who are cared for by volunteers. The refreshments are planned to demonstrate a dish of good food value for the home menu.

The program for 1931-1932 deals with the following subjects:

How the Child's Body is Made, and What It Needs.
The Child's Candy and Other Food Habits.
Marketing for the Child.
How the Family Can Help the Child.
What the Child Ought to Know About Keeping Clean.
How the Child Grows in Mind and Behavior.
Play Time, Playmates, Playthings, Play Places.
How the Summer Vacation Can Help the Child.

In the Food Clinic, which is directly related to the general medical clinic, health education is an inseparable part of food treatment; for the successful outcome of food treatment requires the patient's intelligent coöperation. To that end the patients, both adult and child, coming to the Food Clinic, are taught the elementary relations of food to the body, the elements of hygiene, food values, the principles underlying diet, and how their special diets are planned to meet their special needs. The instruction is adapted to the patient's mentality and it is the more effective in being individual. As in the health education department, materials for visualization are evolved, and assembled from various sources to aid teaching.

In the Adult Medical Clinic will be found another type of health education. It was organized and is carried on by the chief of the Adult Medical Staff for the benefit of patients with whom disease has been ruled out, and who are sufferers from neurosis. A group of these patients meets once a week with the physician. Recognizing that the patient's symptoms are real, but knowing that in most instances the conditions causing them cannot be altered, the physician encourages the patient to overcome them by making the necessary mental adaptations. He gives brief, concise, clear instructions, to help the patient to change his attitude toward himself and his environment. The patients themselves take part by telling of their successes in following the physician's advice. This method of teaching mental hygiene has been effective with many patients in overcoming fear and worry, with consequent benefit to both physical and mental health. In many instances there has been rapid restoration to a normal state and ability to take up life's duties.

Some of the outstanding advantages of the health education program in the Boston Dispensary may be enumerated as follows:

(1) it is definite; always planned in advance,
(2) it is seasonable; topics are discussed when people need them,
(3) it is continuous; visual material is always present and group instruction is given according to schedule.
(4) it is adapted to the mentality of the listener.

d. *Boston Psychopathic Hospital.*

Some educational work in the field of mental health is being accomplished by the Social Service Department. By means of follow-up in the home, an attempt is made to help families of patients to utilize such preventive measures as may seem advisable and to preserve a healthful and happy environment. One social worker spends her entire time in contacting mates and siblings of patients who have shown a positive Wassermann reaction. Special attention is given those cases which show invasion of the central nervous system.

Posters from the National Dairy Council and the Massachusetts State Health Department are found on the walls of the clinic waiting room.

Extensive use of educational materials in this connection is not made as patients usually come only by appointment and their stay in the waiting room is short.

e. *Children's Hospital.*

One morning each week, through the auspices of the New England Dairy and Food Council, a young woman tells health stories to children waiting in the Out-Patient Department.

f. *Deaconess Hospital.*

In connection with diabetic work there is an effective educational program consisting of five open lectures weekly to patients, their relatives, nurses, physicians, and visitors. Besides this, each patient receives individual instruction by a teaching diabetic nurse with reference to diet, examination of urine, prevention and treatment of diabetic coma and insulin reactions.

g. *Forsyth Dental Infirmary*

Some health education is being accomplished in three places at this institution.

(1) Children who are waiting for clinics are cared for by a student dental hygienist. Here they listen to health stories, do handwork, or play with blocks and pictures which are supplied by such organizations as the Massachusetts State Health Department, Cleanliness Institute, New England Dairy and Food Council and Quaker Oats Company. From time to time a True and False Test on Teeth has been given to the older children. The walls of the waiting rooms and playroom are covered with posters emphasizing the value of good teeth and the right foods. (These are also obtained from outside sources.)

(2) Children are taught facts about health (with stress on oral hygiene) by dentists and hygienists in the dental clinic.

(3) At the food clinic, in charge of a full-time graduate nutritionist, parents and children receive instruction primarily about problems of diet, but also concerning general health. A health habit conference is held with each child. Faulty hygiene habits are discussed and suggestions for securing corrections made. Much supplementary printed material, original as well as obtained from other organizations, is used in this connection. During 1930, 800 children received the advantage of this nutrition service. This clinic is directly related to the general medical clinic.

h. *Harvard Medical School.*

Each winter, the Faculty of Medicine of Harvard University offers a course of ten or twelve free public lectures on medical subjects—chiefly their hygienic and preventive aspects. These are largely attended although no actual count is kept of the audiences.

i. *Hull Street Medical Mission Dispensary.*

Here no classes are held, but doctors and nurses are urged to "spread the gospel of preventive medicine" by teaching all patients individually how they may have contracted their illness and how they can prevent its spread to others. During 1930, five nurses made 9,558 home visits, and doctors made 7,047 such visits. Printed materials include diet lists, as well as typewritten forms giving information about teeth, prenatal care, and other health knowledge.

j. *Massachusetts General Hospital.*

The North End Diet Kitchen prescribes and advises diet for patients referred from the Out-Patient Department. In this individual work, instruction is given in weighing food, in the preparation of food, and in the use of recommended diet. Printed educational material is distributed. The Diet Kitchen receives over eight thousand visits a year.

The Children's Cardiac Clinic, in addition to giving advice to patients through social and medical service, has organized a Mothers' Club which meets monthly and is addressed by the Dietitian, Occupational Therapist, Child Guidance Worker, Librarian, or outside speaker.

k. *New England Hospital for Women and Children.*

In an effort to prevent illness during the first year of life, this hospital maintains one morning each week a well-baby clinic for babies who are born there. All of the instruction is given individually by physicians and nurses. Posters and pamphlets on infant care and feeding obtained from outside sources such as the New England Dairy and Food Council and the Massachusetts State Health Department are used at this clinic.

3. *Social and Welfare Agencies*

The large number of social and welfare agencies in the City of Boston precludes a detailed discussion of the work of each. The following table indicates the types of health education activities undertaken by these groups.

*The Boston Metropolitan Chapter, American Red Cross* gives direct health instruction to groups through courses in *First Aid. Home Hygiene and Care of the Sick,* and *Water Life Saving.* These are held at settlement houses, clubs, and social centers. During 1931, classes in the City of Boston were conducted as follows:

| | Number of Classes | Individuals Enrolled |
|---|---|---|
| (a) First Aid | 46 | 771 |
| (b) Home Hygiene and Care of the Sick | 57 | 895 |
| (c) Water Life Saving | 37 | 568 |

Incidental health teaching is also carried on through the association's welfare work. So-

CHART I

HEALTH EDUCATION ACTIVITIES: SOCIAL AND WELFARE AGENCIES

| Name of Organization | Lectures | | | Clubs | | Classes | | | | Other Activities | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Public | Special—Group | Radio | Adults | Children | Mothers | Home Nursing | Cooking | Others | Literature Distributed | Contests | Individual Instruction | Movies | Posters |
| American Red Cross | | | | | | | * | | * | * | | | | |
| Bethesda Society | | | | | | | * | | | | | | | |
| Boston Baptist City Mission Society | | | | * | | | * | | | | | | | |
| Boston Boys' Club | | | | | | | | | | * | | * | | |
| Boy Scouts of America | | | | | * | | | | * | * | | * | | |
| Campfire Girls | | | | | * | | | | * | * | | * | | |
| Catholic Charitable Bureau | | * | | | | | | * | | * | | * | | |
| Dorchester House | | | | * | | * | | * | | | | | * | |
| Ellis Memorial | | | | * | * | | | | * | * | | * | * | * |
| Goodwill Neighborhood House | | | | | * | | | | | | | | | * |
| Hawthorne Club | | | | | * | | | | | | * | | | |
| Hecht Neighborhood House | | | | | * | * | | * | | | | | | |
| Home for Destitute Catholic Children | | * | | | | | | | | * | | | * | * |
| Jewish Children's Bureau | | | | | | | | | | * | | * | | |
| Lincoln House | | * | | * | * | | | | | * | | * | | |
| Neighborhood Kitchen | | * | | * | * | | | | | | | * | | |
| Norfolk House Centre | | | | | * | | | | | | | | | |
| North Bennet Street Industrial School | | * | | * | * | * | | * | * | * | | * | | |
| North End Union | | | | | | | * | | * | * | | | | |
| Roxbury Neighborhood House | | * | | * | * | * | | * | | * | | | | |
| Rutland Corner House | | | | | | | | | | * | | | | |
| St. Mark's Social Center | | * | | * | | | | | | * | | | | |
| Welcome House | | * | | | | | | | | * | | | | |
| Wells Memorial Association | | | | | * | | * | * | | | | | | |
| Women's Municipal League | | | | | | | | | | * | | | | |
| Young Men's and Young Women's Hebrew Associations | | * | | | | | | | | * | | * | | |
| Young Men's Christian Association | | * | | | | | | | | * | | * | | |
| Young Women's Christian Association | * | | * | | | | | | * | * | | * | | |

cial visitors often give advice to families upon health matters. Some literature and instruction often accompany layettes to expectant mothers.

*Bethesda Society* and the *Boston Baptist City Mission Society* sponsor home nursing classes.

*The Boston Boys' Club*, whose membership in Metropolitan Boston comprises nearly 12,000 underprivileged boys between the ages of 8-21, accomplishes a great deal of incidental education in its general health program. The latter includes physical examinations by a physician, home follow-up for correction of defects (1,000 boys per year) by two full-time staff nurses, physical education at gymnasia and swimming pools, and American Red Cross Life Saving and First Aid Classes.

*The Boy Scouts of America* sponsor boys' clubs, a large number of which meet at churches, community centers and schools. Sections of the Scout Handbook are devoted to Personal and Public Health and First Aid, and club members earn merit badges for proficiency in these subjects.

The whole program of the *Campfire Girls* Clubs is based upon seven crafts, the first of which is Health. In order to earn each of her three Campfire "Degrees", a girl must win certain health honors—one of which is to keep successfully a health habit chart over a one-, two- or three-month period. Other health honors are based upon achievements in Home Economics, First Aid, and Life Saving. Campfire clubs often meet at churches, settlement houses, and schools.

The groups listed below maintain settlement houses where such activities as clubs and classes which contribute to health habits and knowledge, lectures for special groups and the distribution of health literature are carried on.

Catholic Charitable Bureau
Dorchester House
Ellis Memorial
Goodwill Neighborhood House
Hawthorne Club
Hecht Neighborhood House
Lincoln House
Neighborhood Kitchen
Norfolk House Centre
North End Union
Roxbury Neighborhood House
Rutland Corner House
St. Mark's Social Center
Wells Memorial Association.

*The Home for Destitute Catholic Children* gives health instruction to all children in its eight-grade school, and also distributes health literature, exhibits posters, and sponsors health talks and moving pictures for other groups which assemble there.

*The Jewish Children's Bureau* discusses with foster mothers health programs for individual children, and distributes health literature to these groups.

Mothers of children who attend the *North Bennet Street Industrial School* are given advice concerning their own and their children's health problems, are invited to attend cooking classes, and receive literature on health subjects.

*The Women's Municipal League* supplies illustrative materials for the required course in "Citizenship Through Character Development" in the public elementary and junior high schools of Boston. Teachers are required to spend 15 minutes per day for character training, together with additional teaching by means of correlation with all subjects of the curriculum.

The loan collection is arranged in the following units: Health, Self-Reliance, Fair Play, Kindness, Teamwork, Self-Control, Reliability, Loyalty, Good Workmanship, Duty, Obedience to Duly Constituted Authority.

The items in the boxes of health material include three models, two sets of directions for handwork, two pamphlets of health rhymes, six health booklets for supplementary informational reading, six posters and pictures, five plays, a health story to be read to the class, a set of health discussion cards, and two children's books.

Although only one unit is entitled Health, practically all of the others make some contribution to this phase of education. For example, the Fair Play Unit contains a model of a grocery store which contrasts a clean, well-kept room with one which is untidy. The Team Work Unit contains an effective poster, "Team Work for Health."

The planning and arrangement of the materials are in charge of two full-time workers both of whom have had teacher training and experience. Each unit is packed in a substantial wooden box—23 of which are now in circulation. Boxes remain in a school district for one month, at the end of which they are exchanged. During the course of a year, every school district in the city will have had access to supplementary material for every unit of the course. Contacts are made with approximately 4,000 teachers per year.

This service is supported by a budget of $5,000, one-fifth of which is provided by the School Department which also pays for the cost of transportation, and allows the League the use of a large workroom in a school building.

*Welcome House* gives health information with special references in social hygiene to individuals who come under its care.

*The Associated Young Men's* and *Young Women's Hebrew Associations* and the *Young Men's and Young Women's Christian Associations* sponsor lectures on health and give advice and instruction to individuals in connection with a broader program of physical activity which also makes a distinct contribution to personal health.

*Other Groups.* The following organizations reported no organized program but occasional health-education activities (such as lectures, moving pictures, or distribution of literature) which are carried on sporadically in connection with social and welfare work.

Boston Baptist Bethel (for seamen and others)
Burroughs Foundation (for newsboys)
Church Home Society
Denison House
Emmanuel Memorial House
Home for Jewish Children
Industrial School for Crippled and Deformed Children
Jacoby Club of Boston
Lions Club of Boston
Little House
Nickerson Home for Children
South End House
Talitha Cumi Maternity Home
Young Men's Catholic Association.

(To be continued)

## NAIL CHANGES IN PULMONARY TUBERCULOSIS*

BY SAMUEL S. HANFLIG, M.D.†

NAIL changes were studied in 294 cases of both active and inactive pulmonary tuberculosis in an endeavor to establish some criteria which might serve as an aid in determining the activity and the prognosis of the disease.

Nails are sensitive to nutritional changes and changes occur during practically every disease. These changes are many, the most common consisting in the occurrence of small pits. These vary in size from a pinpoint to a pinhead. They may be superficial or deep and occur without any pattern. They are most frequent on the index and ring fingers. Usually one finds one to six pits on the nail, rarely there may be many more. They advance distally with the growth of the nail to its edge and in an adult are gone in about 100 days. The average rate of growth is one millimeter in 10 days. Pits are present in toenails but are more difficult to locate because of softening of the nails associated with the wearing of shoes.

Another change seen in nails is ridging or the

*Cases studied at the Essex Mountain Sanatorium, Verona, New Jersey.

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occurrence of furrows, either longitudinal or transverse. Curving of the nails is another change often present, best visualized by the term of "parrot beak nail" when it is severe. There has also been observed in this study a type of longitudinal ridging slightly different from the type previously described, which has been called "beading" for it reminds one of chains of beads strung out longitudinally along the nail. Cyanosis of the nails is another change observed, which was also studied in an attempt to explain, if possible, the other nail changes listed above.

Little is known about the pathological changes in the germinal bed of the nail which must be responsible for these changes. We may assume that a systemic disease can injure the nail bed. If it is a diffuse injury of short duration there results a transverse groove. If it is a local punctate injury of short duration, a pit develops. If it is a focal injury of long duration, a longitudinal groove occurs.

This study was made on a group of 267 patients and 27 ex-patient employees over a period of six months.

The following general observations and local nail changes were recorded: age, sex, tuberculosis diagnosis, x-ray diagnosis, physical examination, stage of the disease, sputum, duration of the disease, activity of the disease, prognosis, pitting of the nails, longitudinal ridging of the nails, transverse ridging of the nails, beading of the nails, cyanosis of the nails, temperature of the hands and feet (grossly), cyanosis of the hands and feet, blood pressure, systolic, diastolic and pulse pressure.

Of the 267 patients studied, 155 were males and 112 were females. The ages of the patients varied from 10 to 70 years. The highest incidence of the disease was in the age groups of 30 to 50 years for males, and 15 to 30 for females. In 258 out of 267 cases, a positive diagnosis of pulmonary tuberculosis could be made. The cases represented mostly advanced cases of pulmonary tuberculosis. Of the 267 cases, 6.4% were minimal in type, 32.9% were moderately advanced, 58.3% were far advanced, and 2.4% were of uncertain stage.

Duration of the disease was noted in an attempt to correlate it with the changes in the nails. Table I shows the duration of disease.

An attempt was made to ascertain the value of nail changes as an indication of activity of the disease. Of our 155 male cases, 130 or 83.8% were active, 24 or 15.4% were inactive, and 1 or .8% was of questionable activity.

Of the female cases, 112 in number, 87 or 77.6% were active, 22 or 19.6% were inactive, and 3 or 2.8% were of questionable activity.

Of the total 267 cases, 217 or 81.2% were active, 46 or 17.2% were inactive, and 4 or 1.6% were of questionable activity.

The cases were also classified prognostically so that we might determine whether nail changes were important in deciding prognosis. They were classified as having a good, fair or poor prognosis. As so classified their numbers were as follows:

Of the 155 male cases, 19 or 12.2% had a good prognosis, 53 or 34.2% had a fair prognosis, and 83 or 53.6% had a poor prognosis.

Of the 112 female cases, 12 or 10.7% had a good prognosis, 44 or 39.2% had a fair prognosis, and 56 or 50.1% had a poor prognosis.

Of the total, 267 in number, 11.6% had a good prognosis, 36.3% had a fair prognosis, and 52.1% had a poor prognosis.

Pitting was studied first. It occurs frequently in pulmonary tuberculosis. Hahn[1] reports it as consistently present in the nails of patients having active pulmonary tuberculosis or so recently inactive that the pits created by activity of the disease had not disappeared. He reported its absence in 100% of ex-patient employees whose disease had been inactive for 1 to 25 years and in a control group of presumably normal individuals.

Our observations question this certainty of the presence or absence of pits, depending on whether the disease is active. We classified pitting as absent, moderate or marked. Table II shows the incidence of pitting.

TABLE II

INCIDENCE OF PITTING

| | Degree of Pitting | | |
|---|---|---|---|
| | Absent | Moderate | Marked |
| Male Cases (155) | 51 or 32.8% | 101 or 65.1% | 3 or 2.1% |
| Female Cases (112) | 26 or 23.2% | 82 or 73.2% | 4 or 3.6% |
| Total Cases (267) | 77 or 28.9% | 183 or 68.5% | 7 or 2.6% |

TABLE I

DURATION OF THE DISEASE

| Duration | 6 Mos. | 6-8 Mos. | 9-12 Mos. | 1-2 Yrs. | 2-3 Yrs. | 3-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15 Yrs. |
|---|---|---|---|---|---|---|---|---|---|
| Number of Cases Male (155) | 20 | 12 | 27 | 24 | 27 | 14 | 21 | 5 | 5 |
| Per Cent. of Total | 29 | 7.7 | 17.4 | 15.5 | 17.4 | 9.0 | 13.5 | 3.2 | 3.2 |
| Number of Cases Female (112) | 15 | 16 | 9 | 31 | 17 | 9 | 10 | 4 | 1 |
| Per Cent. of Total | 13.3 | 14.2 | 8.0 | 27.6 | 15.1 | 8 | 8.8 | 3.5 | .8 |
| Total Cases (267) | 35 | 28 | 36 | 55 | 44 | 23 | 31 | 9 | 6 |
| Per Cent. of Total | 13.1 | 10.4 | 14.2 | 20.6 | 17.2 | 8.6 | 11.6 | 3.3 | 2.2 |

These observations were correlated with activity of the disease. Pitting was present in 77% of the 130 active male cases. In the 87 active female cases, the incidence was slightly higher, 88.6%. Pitting was found in three of the 24 inactive male cases, a percentage of 12.5%. Of these, two were recently active but one was inactive sufficiently long for the pits to have disappeared with the growth of the nail. Seven or 31.8% of the 22 inactive female cases showed pitting. Of these, three had been inactive much longer than the time necessary for the pits previously formed to have moved forward and disappeared with the growth of the nail.

These figures indicate that although pitting is a frequent finding in active pulmonary tuberculosis, it is not an absolute finding and may be present without activity. Characteristic pitting has been seen by the author in several apparently normal individuals, one of whom presented the most marked case of pitting seen.

FIG. 1. Pitting of the nails and longitudinal ridging.

Pitting was studied from a prognostic point of view. Of 101 cases showing moderate pitting, 10.8% had a good prognosis, 29.7% had a fair prognosis, and 59.5% had a poor prognosis.

These figures compare reasonably with the prognostic estimate of the entire group as listed above. There is a slight increase in the incidence of the cases with a poor prognosis, but this may be explained by the fact that our pitting cases are mostly active.

The stage of the disease was studied next as a factor in the production of pits. This study revealed nothing unusual. A slightly higher incidence of pitting was present in the female group of far advanced cases than in that of the moderately advanced cases. This finding, at the most slight, was absent in the corresponding groups of male patients.

Duration of the disease was eliminated as a significant factor in the production of pits. In those age groups sufficiently large in numbers to present a group for satisfactory data, the occurrence of pitting was always the same, irrespective of the duration of the disease. The female group showed a tendency for slightly increased occurrence of pitting in the cases of shorter duration. Correlative studies demonstrated that this was due to the fact that the inactive cases were more generally of longer duration.

Studies were made to determine whether any significant relationship existed between cyanosis of the extremities and pitting. We were interested in knowing whether local cyanosis and its accompanying anoxemia was a factor in the production of pits. In the female group of 112 cases, 86 cases without cyanosis of the extremities showed an incidence of pitting of 75.7%. Twenty-one cases with slight cyanosis showed 76% of pitting. Five cases with marked cyanosis showed 100% of pitting. Our male

FIG. 2. Longitudinal ridging and beading.

group showed a more marked increase of pitting in the group with marked cyanosis of the extremities. One hundred and seven cases without cyanosis showed pitting in 67.8%. Twenty-six cases with slight cyanosis showed pitting in 78.2% and twenty-one cases with marked cyanosis showed pitting in about 90%.

In an attempt to explain these findings we studied the relationship of cyanosis of the extremities to activity of the disease. It was discovered that it was equally common in the active and inactive cases. This suggests the importance of cyanosis of the extremities and its resulting anoxemia as a contributing or perhaps predisposing factor in the production of these focal areas of necrosis in the germinal bed of the nail, and their resulting pits.

Careful studies of the systolic and diastolic blood pressure and the pulse pressure revealed no evidence that any relationship exists between the extent of lowering of the blood pressure present in these cases and the production of pits.

Curving of the nails occurred in the 267 cases as follows: 103 or 38.5% had no curving of the nails, 44 or 16.5% had slight curving, 88 or 33.0% had moderate curving, and 32 or 12.0% had marked curving.

Curving of the nails was present in 165 or 61.5% of the 267 cases. Its relationship to activity of the disease was determined. Curving

was present in 62.5% of the total group of 217 active patients which compares with an incidence of 61.5% of curving for the entire group. Apparently it is not a valuable indication of activity. A finding which was present but which could not be explained satisfactorily was a slightly lower incidence of curving in the female cases. Studies associating curving of the nails with the stage of the disease showed a significant finding. The male group of far-advanced cases showed a higher incidence of curving than the less advanced cases. This finding was even more striking in the female cases.

FIG. 3. Longitudinal ridging and pitting.

Of 13 minimal cases, 4 or 32.0% showed curving of the nails. Of 41 moderately advanced cases, 18 or 43.8% showed curving. Of 53 far advanced cases, 35 or 68.0% showed curving. These data suggest that although curving of the nails may occur early in the course of the disease, it is more often the accompaniment of a lasting and more advanced lesion.

Comparison of curving of the nails and prognosis showed a definitely increased occurrence of curving in the groups with a fair prognosis and an even greater increase in the group with a poor prognosis.

Of the male cases, 5 or 26.0% of the cases with a good prognosis showed curving, 39 or 73.4% of the cases with a fair prognosis showed curving, and 59 or 71.2% of the cases with a poor prognosis showed curving.

The female group showed this even more strikingly, as is apparent from a study of the following figures. Curving occurred in 41.9% of the cases with a good prognosis, 56.3% of the cases with a fair prognosis, and 67.5% of the cases with a poor prognosis.

No relationship of any significance could be established between curving and cyanosis of the nails. Curving was present as frequently without as with cyanosis of the nails. On the other hand a definite relationship between curving and beading was noted. It was found to be more often associated with beading than without it but the reason was not discovered, nor could we establish any significant association between the blood pressure and curving of the nails.

Complete correlative studies of the cases of beading revealed no significant findings. It was present in 29.9% of the cases and in two-thirds of these curving was also found. By mensuration, an attempt was made to correlate the individual beads with exacerbations of the activity of the disease, but none could be established.

Transverse ridging occurred in 12.7% of all the cases, a figure too low to be of any particular value to this study. It is found frequently in presumably normal people.

Longitudinal ridging was present in 94.8% of 155 male cases, and in 77.6% of 112 female cases. As with pitting, our studies revealed that longitudinal ridging was very frequent, but did not occur always with activity of the disease. It did occur at times in long inactive cases. Similarly cyanosis of the extremities was discovered to be an important contributing or predisposing factor in the production of this type of ridging.

FIG. 4. Curving of the nails.

Our group of 27 ex-patient employees was studied. By these are meant former patients,

inactive sufficiently long so that they might be employed by the sanatorium for light labors and be watched carefully for recurrences. They were all anxious to continue at their work and very often attempted to hide exacerbations of activity of their disease. Their nails were examined to see if changes in them could be of value in deciding whether their disease was still active. Nine of these when examined showed pitting of the nails. All of these nine patients were working and were presumably inactive. On the basis of these findings they were put to bed and carefully watched for the clinical indications of activity. Three of these patients who had recently had active pulmonary tuberculosis, still preserved signs in their nails, previously produced. Five of the nine cases were discovered to have active pulmonary tuberculosis. They had been hiding the evidence for activity, as they were anxious to work and were loath to resume treatment. One ex-patient employee had had no active tuberculosis for a very long time, yet his nails persisted in showing pits.

### CONCLUSIONS

Pitting of the nails is a frequent but not absolute finding in active pulmonary tuberculosis. It was present in 77% of male active cases and in 88.6% of female active cases. It is rarely present in long inactive cases. It is of no prognostic significance. Cyanosis of the extremities is a contributing factor in its production.

Curving of the nails occurs readily in pulmonary tuberculosis. It was found in 61.5% of 217 cases. It is not particularly associated with activity of the disease, being a more frequent finding with long standing and more advanced type of the disease and connoting a more serious prognosis.

Transverse ridging is an inconstant and unimportant finding. Longitudinal ridging, however, is a frequent finding usually associated with pitting and of the same significance.

Beading of the nails is described; its nature and importance are uncertain.

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## CAUDAL ANESTHESIA IN UROLOGY*

BY RAYMOND A. HARPIN, M.D.†

ALTHOUGH caudal block (extradural or epidural) has been used extensively enough to prove its worth in urologic procedures, urologists in New England, particularly in the northern part, have been slow in adopting it, with the result that practically all cystoscopic manipulations are looked upon with dread by the majority of patients, either because of personal experiences or from knowing patients who recounted tales of their own trials.

Passing a cystoscope should be less painful and discomforting than passing a bronchoscope, yet I have seen the bronchoscopists of this hospital manipulate their instruments with very little discomfort to the patient, because a suitable anesthetic was used. With this in mind, the members of the department began to use more caudal block anesthesia in their cystoscopic maneuvers, with much success. Spurred on, they began to use it for other urologic manipulations. In order to give uniformity to this observation, I will account for the anesthesia given by me on cases done on the house service, and the private cases since October 1, 1931.

The following table gives the procedures and results obtained from anesthesia; case numbers to be discussed have been included in the different groups.

| No. | Procedure | Cases to be Discussed |
|---|---|---|
| 55 | Cystoscopy | Cases No. 16 and No. 18 |
| 1 | Cystourethroscopy | |
| 1 | Cystoscopy and fulguration of urethral caruncle | |
| 2 | Fulguration of urethral caruncle | |
| 2 | Cystoscopy and ureteral dilatation | |
| 2 | Cystoscopy and urethral dilatation | |
| 1 | Dilatation of urethra | |
| 1 | Dilatation of urethra and internal urethrotomy | |
| 3 | Hemorrhoidectomy | |
| 1 | Bilateral vasectomy | |
| 1 | Bilateral vasectomy and lithotripsy | Case No. 43 |
| 1 | Lithotripsy and resection of bladder neck | |
| 1 | Incision of furuncle of labia | |
| 1 | Plastic of penis (Hypospadias) | Case No. 75 |
| 1 | Dilatation of urethra and incision of prostatic abscess | |
| 1 | Incision of prostatic abscess | Case No. 48 |
| 2 | Ureterotomy | |
| 2 | Fulguration of bladder neck | |
| 5 | Fulguration of bladder tumor | |
| 1 | Fulguration of ureterocele | |
| 1 | Meatotomy and transurethral prostatotomy (Colling's) | |
| 4 | Transurethral prostatotomy (Colling's) | |
| 1 | Suprapubic cystotomy, plus local anesthesia for abdominal wound | |

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| | | |
|---|---|---|
| 2 | Bilateral vasectomy and suprapubic cystotomy, plus local anesthesia for abdominal wound | |
| 17 | Transurethral resection (McCarthy prostatic electrotome); one of these included a meatotomy | Cases No. 76, No. 82, No. 104 |
| 1 | Multiple incisions of perineum for extravasation | |
| 1 | Second stage prostatectomy | Case No. 96 |
| 1 | Urethroscopy and catheterization of ejaculatory ducts | |

113—Total number of cases

In case No. 16, we were dealing with an old lady of 71 years of age, and after repeated trials we could not penetrate the sacral canal.

In case No. 18, immediately after the injection of 20 cc. the patient became restless and screamed, her face was pale and twitching, pulse fast and weak. The head of the table was immediately lowered, and sodium amytal, grains 6, were administered by rectum. Twenty minutes later we were able to cystoscope her without any pain or discomfort. From this time on, we began to use sodium amytal routinely as a preliminary.

In case No. 43, the procedure of crushing a stone took so long that the anesthetic wore off. The patient was re-anesthetized with 20 cc. of 2 per cent procaine hydrochloride. No ill effects were noted.

In case No. 48, after waiting twenty minutes, the perineum was not anesthetized, so gas-oxygen anesthetic was required. On two subsequent occasions, however, the same man was given caudal block successfully, which makes us feel that the first failure was due to an error in technique.

In case No. 75, the surgeon, being anxious to lose no time, did not wait more than five minutes before he started the operation. Gas-oxygen was required, and was discontinued after ten minutes, and the operation proceeded for forty-five minutes more, without gas. Here we are satisfied that the caudal block worked satisfactorily.

In case No. 76, on turning on the cutting current in the McCarthy prostatic electrotome, the patient required gas, but in No. 82, the same patient had the same procedure successfully performed again under caudal block, which further convinced us that the first failure must have been due to technique.

In case No. 96, we feel that this case was not suited for caudal block and local anesthesia alone, due to the great amount of manipulation required. Here we had to supplement with gas-oxygen.

In case No. 104, gas-oxygen was needed, and due to our previous experiences we feel that faulty technique might have accounted for it.

Our percentage of failures is roughly 4 per cent, while that given by most writers averages 15 per cent failures.

The technique briefly summarized is as follows:

The site of entrance is the sacral hiatus in the lower extremity of the spinal canal. It is an opening resulting from the non-closure of the laminae of the last sacral vertebra and is covered by thin fibrous tissue, called the sacrococcygeal membrane. The sacral hiatus lies at the junction of the sacrum and the coccyx and is bounded by the sacral cornua on each side, and the spinous process of the fourth sacral vertebra in the mid-line higher up. It has an inverted V shape. Many operators like to have the patient lie flat on the stomach with a cushion under the hips to raise the sacral region, but we prefer and use the lateral recumbent position, with the patient on the left side, with knees and head slightly drawn in so as to arch the back sufficiently to render the landmarks more accessible. The patient is then prepared with picric acid or mercurochrome - acetone - alcohol solutions. The index finger is passed along the coccyx to the junction of the sacrum, where it encounters a depression which is bounded by the sacral cornua on both sides, and the fourth sacral spinous process in the mid-line above. The site of puncture is the center of the triangle formed by the sacral cornua and the fourth sacral spinous process. Opposite this point a wheal is raised with 2 per cent procaine intradermally, and the injection then carried down to the sacrococcygeal membrane. A hypodermic needle is usually used for this procedure. A larger needle with stylet is introduced into the canal to just beyond the sacrococcygeal membrane; this needle is then depressed slightly, so as not to impinge on the posterior wall of the canal, and then advanced one-fourth inch.

We find that we obtain good results without pushing up any farther into the canal, where there is a possibility of tapping cerebrospinal fluid. The stylet is then withdrawn and aspiration is made for blood or spinal fluid. If spinal fluid is present, I believe no attempt at anesthesia should be made by this method, as the pressure is very apt to force the solution into the subarachnoid space; if blood is present, withdraw and try again; if blood persists, try other methods of anesthesia. If no fluid is aspirated, 20 to 30 cc. of 2 to 3 per cent procaine hydrochloride is injected slowly, the needle is withdrawn and the patient turned on his back. It is not necessary to lower the head, as we are not in the subarachnoid space. We do lower the head for a few minutes, however, as we believe that this causes a wider distribution of the fluid in the sacral canal and makes for better results.

The sacral canal is filled with richly vascularized loose adipose tissue. The spinal cord usually ends between the first and second lumbar vertebrae, and the dural sac reaches down to the

second sacral foramen. The sacral nerves and the coccygeal nerve emerge from the lateral wall of the dural sac, and spread out fanwise to their respective foramina. Thus, the lower three sacral segments are always blocked, and the upper two depending on the fluid reaching them. This accounts for our tilting the table down slightly.

The skin of the anus, scrotum, perineum, penis, or vulva, is anesthetized. The lower rectum, vagina, urethra, prostate, posterior wall of the bladder and ischio-rectal fossae are also anesthetized.

### PREOPERATIVE PREPARATION

From the standpoint of anesthesia, we give sodium amytal, 3 to 6 grains, one hour before operation, for two reasons:

1. Some people are sensitive to procaine hydrochloride and the barbituric acid derivatives offer some measure of protection against procaine poisoning.
2. It gives the required sedation.

It usually takes from 10 to 15 minutes for the effect of anesthesia to become apparent, and the duration varies from one to one and a half hours. No special postoperative care is required from the standpoint of anesthesia.

We believe this to be the anesthesia of choice for transurethral manipulations.

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NOTE—The author up to date has a total of 152 cases, 24 of these being transurethral resections with the McCarthy prostatic electrotome. In the additional 39 cases there was one failure (a hydrocelectomy).

## THE MINORITY REPORTS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE*

BY NATHAN B. VAN ETTEN, M.D.†

I HAVE the honor, Mr. Chairman, to comment briefly upon some divergent visions of a few members of our Committee upon the solution of the problems of "The delivery of adequate scientific medical service to all of the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." All of the studies were pointed at this target or at sources of reflected light which might illuminate it.

The work of the Committee carried on by an exceptionally able director and staff, is monumental and we learned much about adequacy, costs, and distribution, and the details of many experiments supported by masses of statistics which were delivered so rapidly and so continuously that there was some inevitable indigestion when we suddenly changed into gentlemen of the jury who must weigh evidence and recommend cures for a faulty social operation.

All concurred in praise of the diligence, skill, and logical presentment of the findings and in most of the interpretations. All tried to harmonize themselves into unanimity with such success that upon only a few fundamentals or implications are there dissentient opinions. One believes that the report has missed the target; another that the recommendations have fallen short; and others believe that the mark has been overshot by excursions into Utopian idealism.

The objections of the minority composed of eight physicians and a clergyman, are to the recommendations in "Organization of Medical Services," and "Group Payment for Medical Services." The minority report of two leaders in the national dental organization is in general accord with the first minority, but in agreement with the majority upon "Group Payment."

The minorities desire changes in medical education, urging—in addition to the present scheme which seems to qualify sufficiently for the care of 80 per cent of the ills of mankind—emphasis upon the development of clinicians and added accent upon the importance of teaching disease prevention. They wish that mere prudential ethics may be strengthened by spiritual ethics and that only those possessing high character and high educational qualifications be admitted to the professions.

Premature specialization and overspecialization will be cured by the special societies acting within themselves, and the evolution of dentistry into whatever its destiny as a department of medicine will be determined by the concerted action of a well-organized profession.

The minorities object to contract practice whenever it operates in restraint of opportunity for all competent and reputable physicians in the community, or results in unfair competition or furnishes inferior medical services. The same objections are made to pay clinics when operated for profit by laymen as "exploitation of the public and of the medical profession" through inferior quality of service with no lessening of the costs of medical care to the patient who must add operative charges to the

*Delivered at the National Conference on the Costs of Medical Care, New York Academy of Medicine, November 29, 1932.

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normal or average fee prevailing in the community.

The minority claims overemphasis upon the virtues of group clinics and cites in opposition the large number of groups treating patients under workmen's compensation laws, in active competition one with another, "soliciting patients through paid agents." Many of these groups are under lay control—keeping down costs by employing physicians of low ability, commercializing medical practice, lowering ethical standards, demoralizing physicians into undignified advertising in factories, reminiscent of the old lavatory pasters, leading physicians to compete for practice by buying cases for one-third or one-half of their fees and, in collusion with agents, prolonging treatments far beyond reasonable limits and padding their bills, as developed publicly by the Seabury investigation this year, and not denied.

The minority objects to the influence of this Committee being used in the promotion of new forms of political bureaucracy, feeling that the unsatisfactory operation of the forms of compulsory sickness insurance now carried on in forty-four states under workmen's compensation laws has degenerated into racketeering in our large cities and should be corrected by legislative action which should lead to real revision of these operations and carry them into the administrative hands of those who represent the higher medical honor and higher medical intelligence of the community.

Here the hospital or medical center may furnish the place and the skilled staff service all of which should be amply paid for.

No arguments demonstrate a *quality* of service, in countries where compulsory health insurance prevails, which is superior to the admittedly inadequate and badly distributed service now operating in the United States. Quoting from Simons and Sinai:

> "Contrary to all predictions, the most startling fact about the vital statistics of insurance countries is the steady and fairly rapid rate of increase in the number of days the average person is sick annually and the continuously increasing duration of such sickness. Various studies in the United States seem to show that the average recorded sickness per individual is from seven to nine days per year. It is nearly twice that amount among the insured population of Great Britain and Germany, and has practically doubled in both countries since the installation of insurance."

The minority report states:

> "It ought to be remembered that compulsory insurance will necessarily be subject to political control and that such control will inevitably destroy professional morale and ideals in medicine. Since a qualified and untrammelled medical profession is the only agency through which scientific medicine can be applied for the benefit of the people, it follows that any plan which destroys professional morale will bring disaster to the public."

Quoting again from Simons and Sinai:

> "While the statement might be disputed by insurance societies, a comparative study of many insurance systems seems to justify the conclusion that the evils of insurance decrease in proportion to the degree that responsibilities, with accompanying powers and duties, are intrusted to the medical professions."

This statement is both a challenge to the medical profession and a warning to those who, without proper consideration of that profession, are willing to recommend the adoption of various new plans for the care of the sick.

The minority feels that our Government has strained paternalism far beyond moral justification in the extension of veterans' hospitals and in the hospitalization of veterans with non-service disability and has spent the people's money with inexcusable recklessness. This sorry exhibition should make us all shy of Government invasion into control of any phase of medical practice except, of course, in the field of public health and in the institutional care of those unemployable wards of the State—the tuberculous, the insane, the feeble-minded, or the hopelessly crippled.

The minority objects to the large medical center as projected by the majority on the ground of exclusion of many physicians of oppressive competition, of big business technique erecting machinery which eliminates personality and destroys personal relations by factory forms. Mere bigness is often a liability. The city of New York is so big that real community interest and civic pride are crushed and the citizen taxpayers are too numb to protest against a non-official self-perpetuating political machine which rides them.

The minority recognizes the practicability of centering medical service in small places where there are only one or two hospitals and where all of the physicians of the community are permitted to use all of the facilities of the hospitals in a true community spirit, the institution being supported by taxation or by gifts. My personal opinion is that if all hospitals were open to all reputable physicians (not merely the laboratory facilities, but beds as well) many of the problems of public service would be solved. I had always believed this to be administratively impossible until it was positively demonstrated to run smoothly in a very large hospital. Places where there are no hospitals and few physicians, dentists, or nurses, must be served in other ways with the entire health service of the county concentrated upon ways of distributing urban surpluses into neglected fields.

The minority favors continued study of group practice, coördination of the medical, dental, pharmaceutical, hospital, and nursing professions, the study of the application of the insurance principle to the accumulation of reserves, and to the assurance of solvency of institutions.

The "challenge of the future" in the majority report is a vigorous, stimulating statement that the work is not only not finished but only just begun, and that continuous widespread efforts must be carried on through all medical, educational, and all other agencies whose interest leads them earnestly to desire the prevention of disease and the general health of our people.

## SCIENTIFIC METHOD IN MOTOR VEHICLE ADMINISTRATION*

BY CHARLES S. SLOCOMBE, PH.D.†

STRANGELY enough Motor Vehicle Departments throughout the whole country have never been designed as agencies for accident prevention. As originally set up in Massachusetts the Department of Motor Vehicles has had two functions with which to exercise its control over those drivers using the roads of the State. The Department issued licenses to men and women whom they considered qualified to operate motor vehicles safely and took action on the licenses of those who were later proved to be incapable. A feeling has been growing in Massachusetts, at least, that the Motor Vehicle Department could be more specifically designed as a unit for accident prevention. This fact having been recognized, the Legislature last year made an appropriation for studies which should endeavor to find out in exactly what way the registry could become an effective accident prevention agency. What new methods were needed? What new machinery must be installed? In short, as such an agency how, when, and where could the registry operate? The findings of these studies are in part herein described.

If it is assumed, as it must be, that the highway engineers are now constructing roads which are as safe as possible upon which motorists are to operate, and that the automobile manufacturers have developed machines mechanically safe, it then follows that any accident prevention work of a motor vehicle department must largely center around influencing the characteristics and habits of persons as automobile drivers. The work, therefore, must primarily be concerned with the behavior or the misbehavior of human beings. Any such studies should be of primary interest to psychiatrists and psychologists and to medical men.

### GENERAL CHARACTERISTICS OF REPEATERS

It has been found that accidents are not distributed evenly among operators. It is quite possible that one person should have more accidents than another because of differences in the conditions under which he drives, but it is also possible that one person may have more accidents than another because of differences in manner of operation or ability to operate. There are statistical means by which it may be determined whether the latter condition is superimposed upon the former. The application of these procedures to the records of street car operators, bus operators, taxicab drivers, and employees of industrial plants as well as to those of automobile operators shows plainly that there does exist a group of persons who have more accidents than the average and whose excess of accidents is due for the most part to their own methods of operation. There exists therefore a small group of from 5 to 15 per cent who are involved in from 35 to 55 per cent of the total accidents. These people have been termed accident persons. Not because it is more appropriate but because it is shorter, the term repeaters will be used for these people.

The existence of such a group concerned in, and most often, at least, partly responsible for, a substantial proportion of accidents having been established, what are the characteristics of these people?

(1) They are not confined to any particular social group so far as can be determined by their occupation. On an occupational basis we find the accidents run as follows:

| *Occupation* | *Percentage in Each Accident Class* | | | |
|---|---|---|---|---|
| | Very Good | Good | Medium | Poor |
| Housewives | 61.0% | 21.2% | 8.9% | 8.9% |
| Clerks | 43.5 | 36.7 | 13.1 | 6.7 |
| Artisans | 43.1 | 32.0 | 13.8 | 11.1 |
| Merchants | 46.0 | 23.0 | 13.5 | 17.5 |
| Professional Men | 39.3 | 34.2 | 14.5 | 19.0 |
| Agents and Salesmen | 26.4 | 31.9 | 23.6 | 18.1 |

The annual mileage covered by these different groups probably varies and to some extent accounts for the difference in the number of accidents. It is true, however, that even though the average accidents are higher among professional men than they are among housewives yet there is as appreciable a number of repeaters among the housewives as exists among the professional men.

(2) Territorial hazards as indicated by insurance zoning do not have an appreciable effect upon the number of repeaters. Among rural operators in other words, there is as great a pro-

*Presented by invitation before the Massachusetts Psychiatric Society, October 30, 1931.

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portion of repeaters per thousand as there is among city operators.

(3) The proportion of repeater operators among the younger age groups is higher than it is among older operators. Again it should be noted that these repeaters exist at all ages, but are present in greater numbers among younger drivers. The experience factor does not seem to be responsible for this.

(4) There is no relationship between the accidents of repeaters and the number of their violations of road rules, city ordinances, state laws, and general traffic regulations. This is a curious finding, for it is undoubtedly true that these people have a large number of accidents because their operation is faulty. While it is true that the quality of this faultiness may not always involve infractions of rules yet in a great many cases it can be so classified. One would, therefore expect to find that the record of violations of a person with ten accidents in a period would be greater than those of an operator who had come through the same period with no accidents whatever. It is found, however, that a man with no accidents is fined for speeding, passing intersecting streets or other infractions just as often as is the man who has ten or twelve accidents. This point seems to indicate a failure of the enforcement machinery. This will be discussed again later.

(5) These repeaters in their collisions with other automobiles collide more frequently with other repeaters than they do with good operators. A good driver meeting one of these incompetent repeaters at an intersection will very often be so capable that an accident is avoided whereas, if two of these incompetent people come to an intersection or meet on the road they very frequently come into collision.

(6) These repeaters are generally chronic in their repetition. Studies have been made of their accidents over five and ten year periods, which show unmistakably that, unless some appropriate action is taken, a person who has many accidents during one period is almost certain to have them during the succeeding period. On the other hand, of course, those who have no accidents during one period are almost certain to go through the succeeding period with a clear record. Of the worst group of repeaters during four years it was found that eighty per cent of them had one or more accidents in the fifth year; whereas only nine per cent of those operators in the best group in four years had an accident in the fifth year.

There exists in brief a group of chronic repeaters which may conservatively be estimated as constituting five per cent of the whole. These persons are involved in 35 per cent of the total accidents. Though they are often young, they exist in all sections of the community and in all parts of the state. They display either a fondness or hatred of one another, for they frequently come together in collision.

The strongest reason for their having accidents is not the conditions under which they operate, but their own personal inability to operate. A study once made of street car motormen showed that the number of accidents which a man had was determined to the extent of 75 per cent by his own ability and 25 per cent by conditions such as weather, equipment, light, road surface, etc.

### INDIVIDUAL REPEATERS

The characteristics of these repeaters as a class have been described so far as they are known. Why are they in this class? What kind of personal disability, incompetence, unwillingness, or other such characteristics are responsible for their being in this class? The question is very frequently asked, what is the most frequent cause of people being repeaters?

These causes have not been tabulated in terms of frequency. It has appeared dangerous to do so. Some are wilfully reckless, others are thoughtless, others ignorant, others lacking sound judgment of speed and distances, while some are unable to gauge the effect of weather conditions on road surfaces. Some are physically unfit to operate, others are mentally unfit, others again are perhaps emotionally unsuited for motor vehicle operation. But how many fall within each classification is not known.

It is perhaps better to think in terms of the individual repeater and the cause or causes of his accidents. For these repeaters have to be treated as individuals, differing perhaps in almost all respects except that they have many accidents. The process of determining in the case of an individual the cause or causes of his accidents is most naturally called diagnosis. This term, however, carries with it an implication of thorough exactitude which must at most times be absent in dealing with repeaters. Many factors affecting their accidents must necessarily be neglected, in dealing with the public at least. In a transportation company it is possible to get some data as to health conditions, medical conditions, eyesight, hearing, family circumstances, etc. In dealing with motor vehicle operators, however, public opinion has not advanced to the stage where such personal questions are permissible. In any case it seems that they should not be asked. Diagnosis then must neglect much and infer much. This does not mean that it cannot be reasonably accurate.

What information then is available on which diagnosis can be made? What further information should be available? What remedial measures can be applied when the diagnosis is made?

Mr. B. has had ten years' driving experience. He is thirty-one years of age and in the last

four years has had nine accidents, six of which involved collisions with automobiles proceeding in the same direction. These cars have either cut out to pass him and collided with his front left fender when cutting back in, or the accidents have occurred when Mr. B. himself, driving out from the curb or from around a parked vehicle, has collided with passing vehicles. The following is a brief description of each of his accidents of this type.

In April, 1926, Mr. B. collided with the rear of a car which while passing him had been forced to cut in suddenly because of a car coming the other direction. An operator attempting to pass Mr. B. in December, 1927, was struck by the latter when at the sound of his horn Mr. B. suddenly turned to the left and hit the right side of his car. In March, 1928, the rear of Mr. B.'s car was bumped when, after passing another car, he abruptly stopped for no apparent reason. Toward the end of the same year Mr. B. had another accident. A taxi had stopped a short distance ahead to discharge a passenger. Mr. B. turned out to pass the cab just as another car was about to pass him. Seeing this other car Mr. B. pulled back and struck the rear of the taxicab. Mr. B. had three more accidents in the next two years differing from these, but in 1931 again came back to this general type. In January of that year he struck a car to the left of him when starting up in traffic and three months later hit a man who ran into the front of his car.

What is the reason for these accidents? The above is most of the descriptive material on this man's record from which one might attempt to make a diagnosis. It must be readily seen that very many reasons might be the cause of his accidents. He may be driving too fast, he may be disregarding the signals of the other operators or he may be misjudging the distances and speeds of the other vehicles which cut in. He may be deaf. He may have only one eye. These factors are unknown. Here is a man with numerous accidents, however, who must either cease having them or be taken off the road.

A second case is that of a young woman who has been driving a car for four years. She has had three accidents in the last two years. A brief description of these will show that there are many possibilities as to the causes. In February of 1927, Miss M. turned left directly into the path of another car which was turning the corner. Miss M. was approaching. She said that the second car was coming down the middle of the street preventing her passing on the right. A few months later Miss M. was approaching a car which had stopped in the middle of the road to let some passengers out. Seeing Miss M. this car started up and pulled to the extreme right. Miss M. thought that she could not get by and so tried to pass on the left side. She skidded and struck the other car. In February of 1930, Miss M. struck the rear of a car ahead of her which at that moment had stopped for traffic signals. Miss M. later said that she thought it would have been better judgment on the part of the other operator to have gone through. Apparently she was prepared to have kept on herself.

Let us but mention another case as an example. It is the record of a dentist, a middle-aged man, who has been driving nine years and has had nine accidents. These have all been varied in type, and so far as we can know, there might be many reasons for his having become involved in them. The number of individual records of this type which may be quoted are legion. The ones mentioned above have merely been chosen at random. We cannot from the paper records of those three people determine with any degree of certainty the causes for their accidents. But it is certain that the causes of their accident tendencies can be determined and that they can be cured.

### OBTAINING MORE ACCURATE INFORMATION

What steps must be taken to enable a more accurate determination? The thought may occur that there are two methods by which such people might be prevented from existing on the road as operators.

A frequent suggestion is that, by setting up a suitable qualifying examination to determine their fitness, such drivers could be prevented from ever becoming licensed to operate. In many states there is at present a qualifying examination for new operators but in almost all cases its purpose is not to determine, except in the roughest way, their physical or mental fitness to operate, but rather whether they know enough about the rules of the road and have received an adequate amount of actual practical instruction to be able to handle their vehicles under the most favorable circumstances. Such an examination usually takes twenty minutes.

As to the use of tests of reaction time, peripheral vision, distractibility, and the like, much experimentation has been done, and in fact such tests are now being used in continental countries. There is no conclusive evidence that tests such as these can determine with any degree of certainty those who ought or ought not to operate. In two years, experimentation with the motormen and bus operators of the Elevated while there was found some relationship between test results and the number of accidents which a man had had there were also many other factors, such as the man's medical condition, his blood pressure, the condition of his teeth, his attitude toward the company, his ability to remember instructions, etc. All these affected the number of his accidents and the test result was only one out of a possible ten fac-

tors. Even if one could extend an examination period to four hours, it is apparent that the results of a four hour test in any number of ways could not possibly forecast a driving record for a future forty years. The possible further development of tests or their periodic repetition is another matter. Tests are, however, very useful aids in diagnosis.

The other solution to the problem might be the automatic cancellation of the license of any person with more than a given number of accidents within a period. This on the face of it appears simple. But many complications are involved. What is an accident? Who is to determine the responsibility? What about those persons who depend on driving for their livelihood? What number of accidents should be taken? Even these few points are so difficult to determine that this solution appears an impractical one. It is probably unnecessary except in a small percentage of incurables. There is yet no lengthy experience in dealing with motor vehicle repeaters by individual diagnosis. But with 5000 operating employees of the Boston Elevated Railway and the Eastern Massachusetts Street Railway it was found, apart from the small percentage of incurables, that the repeaters could be cured of their accident tendencies by suitable organization and methods developed for that purpose. If it is possible to treat automobile repeaters in such manner as will lead to their ceasing to have accidents in the future, this ought to be done. Then they may continue to enjoy, or, perhaps begin to enjoy, the operation of their motor vehicles rather than be denied for the rest of their lives a privilege which they might have.

Returning to the problem of the further information necessary in making an accurate determination of the causes of the accidents of repeaters, there is an almost total absence of material descriptive of the habitual modes of operation of these persons. That is to say, on their records there are accidents and an occasional record of a court conviction for speeding or some such other violation. But as mentioned above such records of violations as do appear, in so far as they appear also on the records of good operators, cannot be regarded as discriminative indices of faulty operation.

With a view to obtaining more accurate information of this type, and also to obtain some measure of control there has recently been set up in Somerville, Mass., a system of police supervision of motor vehicle operation. (Somerville is a city of 100,000 inhabitants adjacent to Boston, and within the so-called metropolitan area.) This differs in its character and administration from the ordinary methods of control in several respects. Studies have been made of the places where accidents happen, not only as to the nature of these accidents but also of the characteristic types of operation leading to these accidents at their specific locations. The police, then, in their checking of improper operation are acquainted with the results of these studies and consequently know the types of operation which are really improper for each place. Hence any operator who is cautioned because of improper operation in the city of Somerville is so warned because his operation was considered really improper with due regard to all the circumstances. When individual notice of such warnings appears on a man's record it is significant and truly descriptive of his operation.

Furthermore it is beginning to show that while good operators may occasionally offend or perhaps operate not with the best judgment, yet the repeater who habitually does not operate properly has many of these repeated warnings or instructions by police officers on his record. Thus a relationship between the accidents of a man and his record of faulty operation is becoming apparent. This not only gives a record on which he may be severely dealt with if he does not mend his ways, but it also gives the necessary material, descriptive of his operation which is so valuable in making a diagnosis of the cause of his accidents.

This record of police warnings is related to the operators' accident record in the motor vehicle department. It is the common practice of police departments to put operators into court for violations. In Somerville this is no longer done, except in the most serious cases. For it is felt that the so-called violation of an operator often consists merely in a misjudgment and not in a wilful or criminally negligent act. It appears grossly unfair that a responsible and reputable citizen, because in the judgment of a police officer he goes a little too fast past an intersecting street, should be haled into criminal court, there found guilty of a criminal act and his name entered accordingly. This is not only unjust to such an individual, but it is felt by him to be so and is resented. Motorists operating in Somerville who are warned by police officers now have their names, the nature, time and location of their offense sent to the motor vehicle department. There the operator's previous record is looked up and if there are indications that he is an habitual offender he is called in for a hearing or the Police Department may be advised to prosecute. If no prior offenses appear on his record, the matter is merely filed and if he does not offend again, nothing more is heard of the matter. In this way a check is kept on those who habitually operate improperly, and they are differentiated from the man who rarely but occasionally makes a misjudgment or error.

This Somerville plan has accomplished two major purposes. It has given adequate and true information descriptive of operators' habits and in so far as police officers not only caution or warn motorists but also instruct them in ap-

propriate and proper operation, accidents in Somerville have shown substantial reduction, that is from 682 to 475, and there have been no fatalities.

A few figures in this connection may be of interest. During the period July 1 to October 31, the time during which this plan has been in operation, approximately 15,000 motorists have been stopped by officers for improper operation. Of this number 10,000 have been cautioned and no record taken. The other 5000 have been warned and a record of the warning made. Only 15 have been put into court and substantially fined. These have been mostly unauthorized persons, that is those without licenses, or operating after revocation of license. Not more than half a dozen have been fined for wilful disregard of traffic rules. Another dozen or so have had their licenses suspended.

Thus not by strong arm methods with wholesale criminal proceedings, but by intelligent, reasonable and consistent control, the police department of Somerville in coöperation with the registry of motor vehicles has shown that motorists need no big stick to make them operate safely. This has not been and is not a safety campaign. It is being built in, as a permanent police function.

It is not to be understood that severe action and criminal proceedings should not be taken against the law breaker, but all so-called violators of automobile regulations are not law breakers, and proceedings should be appropriate to the individual and his actions. In such a way, in Somerville and now in Arlington, Cambridge and shortly in Boston there are being developed means by which the faulty operation of repeaters is known and recorded, and their operation improved by warning and instruction.

### INTERVIEWING THE REPEATER

There has been left to the last what will appear as the most obvious method for determining attitudes, motives, and thoughts of people, that is by means of an interview in which a person has an adequate opportunity of describing his own actions to a trained interviewer. Take for example a few of the cases of repeaters which have appeared at the hearings. This will show how they differ one from another in the causes of their accidents and also how such an interview, following the study of their accident record and some description of their operating habits, has led them to have a corrected view of their own accidents and their causes so that they have thereafter ceased to have accidents.

There was the case of Mr. P. This man had had several accidents, all of which occurred at intersections. At his hearing Mr. P. was at a loss to explain the reason for these, but the cause was soon evident to the interviewer. This man would stop his car at every intersection and look carefully to the left and right. Then he would direct all his attention to starting the car and driving across. In the meantime some car which had come up from the right or left, thinking that Mr. P. had stopped to let him cross would keep on going and be struck by Mr. P. when half way across. Mr. P. had this fault pointed out to him and his repeated accidents have ceased. Mr. S. was another repeater whose accidents have stopped since his hearing. This man's accidents took place when he attempted to turn left off a highway. Twice he struck cars coming the other direction on the main road and once a child who stepped off the sidewalk on his right as he was turning. Mr. S. was devoting all his attention to the road on his left. As soon as he was told to divide this attention his list of accidents stopped.

Both of these cases were men who had been trying to do their best and were willing to learn. All cases, however, are not like these. Drivers whose accident records show wilfulness and carelessness must be frightened into better driving. This is done by threats of revocation or a comparison of their record with those of men who have already had fatalities. Of course, when neither of these courses bring about the desired results, punishment must be imposed.

Interviews must be conducted by men trained in this work. Does this mean that they should necessarily be professional men? Not at all. It is found in the public utilities that superintendents who had been trained in street railway operation for many years and who had had no technical training in interviewing could, under proper guidance and instruction, develop an understanding of repeaters, diagnose the causes of their accidents and apply remedial measures. In fact the work of this type which has been accomplished in several companies consisted in the training of some sixteen or twenty superintendents and managers in the purposes and methods of diagnosing repeaters and effecting an improvement in their operation. In organizing their operating supervision in such a way, these companies have installed a system exactly like that now being developed by the police departments in Boston and the neighboring cities for the same purpose.

It has been said that the repeaters, such as we have been discussing, should have an adequate opportunity of describing their own actions and giving their reasons for them. This is the only way by which their attitudes and their actions may be corrected and their accidents stopped.

Realizing the fact that the existing system of records in the department did not bring together all information available as to the operation of repeaters, nor enough to guarantee the isolation of the majority of these from the larger group of safe drivers, the present registrar immediately upon taking office, directed that a satisfactory record system be established.

A master file was set up in which every accident, incident, and event of a licensed operator is recorded on a card reserved for his special record. In such a way the entire road history of every operator can be closely observed, and the number of repeaters now being apprehended is rapidly growing. Consequently the number of operators to be interviewed by the registrar, his deputy, and assistant, is increasing at a rapid rate. He has already had to enlist the services of other officers in his department for this work, and it is certain that he will shortly require additional permanent assistants to conduct interviews with the repeaters.

Every possible type of man appears at these hearings. They have but three things in common—the likelihood of having frequent accidents, the innate conviction that it is always the other driver's fault, and the self-pitying belief that each one of them has constantly been the victim of mighty tough luck. It is needless to point out that all of these men must be treated differently. These hearings are primarily courts of learning, rather than of justice. All the accidents are carefully gone over. The operator is told that he must expect to meet speed maniacs, drunken drivers, and wilful operators, that such as these are always on the road, and that he must constantly be on the lookout for them so as to avoid accidents. In other words, there is developed in these men an increased sense of road responsibility and a true meaning of the word "fault". The hearing inspectors are always on the lookout for any similarity in a man's record and the fault which this similarity displays is carefully pointed out to him. The reason for the registry's attaching so much importance to small accidents and offenses is stressed and similar records which have already led to fatalities are mentioned. In many cases an operator's fault is so glaring and his wilfulness so apparent that suspension is immediately necessary. Most of the operators summoned appreciate the work which the registry is doing, and eagerly assimilate the suggestions made to them. Those whose attitude is different and who leave the office with a chip on their shoulders are confidently expected to be in again shortly. The lesson, at that time, will be severer.

It was mentioned above that these hearings must be conducted by men trained in this line of work, although not necessarily professional men. These men are tutored to a certain extent. They are particularly taught to detect any signs of faulty operation, and to estimate as well as possible, with brief notes, a man's mental and physical ability with his general character and understanding. The factors which would most interest a psychiatrist receive only the slightest consideration. There is no question that under an ideal system a more expert person could well be present at such interviews. Such a man could spot the epileptic, the neurotic, and the moron. This factor, however, constitutes a refinement to the system for which the State is not yet ready.

### CONCLUSIONS

In the light of all this, it is sincerely believed that a well-rounded program of public safety must include, first an adequate system of accident reporting and record keeping as has been developed under the present registrar; secondly, a properly designed supervision of operating such as is being installed in cities adjacent to Boston in coöperation with the registry; thirdly, a set-up adequately arranged at the registry for the interviewing of all of these repeaters. Each hearing should consume from about twenty to thirty minutes.

There seems no doubt that these changes will prove the solution of one of the greatest problems, with which every state is now confronted. When completely developed there is no conceivable reason why this system should not effect a reduction in accidents comparable to that which has been realized in those transportation companies in which such a plan has been adopted. This will be the first time that the automobile problem has ever been successfully met since the situation first arose. It is a problem which not only concerns every owner of a car, but anyone who at any time rides in a car. It concerns any family with children. It concerns anyone who in any manner appears on or near the roads. It is all embracing and any system designed to cope with such a situation should have the undivided attention and interest of everyone.

### LEAGUE OF DOCTORS AGAINST WAR

During the sitting of the Anti-War Congress at Amsterdam at the end of August, an International Medical Conference took place at which representatives from France, Germany, England, Austria, Czecho-Slovakia, Switzerland, Holland, etc., also from the Far East, were present. The Conference was in agreement with Dr. Felix Boenheim (Berlin), who was appointed Secretary of the League, that the terrible consequences of the last war from the standpoint of the health and life of the nations, demanded concerted action against war from the medical profession. Dr. Bushnell (London) gave statistical evidence of postwar diseases, and stressed the great increase among the new generation born during the war, of *certified mental deficiency*.

An International Appeal to Doctors against war was unanimously passed, and those present undertook to carry out educational work showing the evils of war and the horrors that would follow the use of poison gas. An International Medical Committee of the Anti-War Congress was set up with headquarters in Berlin (Dr. Felix Boenheim, Berlin, Schlüterstrasse 33, Germany) to continue the collection of evidence and direct the doctors' campaign against war. The desire was expressed to have a further conference in London during 1933.—From "*The War Resister*" Autumn Issue, 1932.

# CASE RECORDS
## *of the*
# MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
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## CASE 19011

## TWELVE YEARS' DYSPNEA WITH OCCASIONAL CONVULSIONS

MEDICAL DEPARTMENT

A widowed American housewife sixty-five years old entered complaining of severe dyspnea of one month's duration.

For twelve years she had had dyspnea on exertion. Eleven months before entry she had a convulsion in which she stiffened out, became cyanotic, gasped and was unconscious for an hour. On returning to consciousness she was weak and dyspneic, but the following day was as well as usual. Two months before entry she had a similar convulsion lasting an hour and a half. From that time she had had increasing edema of the legs and dyspnea, had grown weaker and had had cyanosis of the lips. Two weeks before entry she had a third attack, since which the dyspnea, edema and orthopnea had become more severe. She had a constant choking sensation in her throat and could not lie down. The evening before entry, however, she climbed the stairs to her bedroom.

Her father died at sixty-seven of a heart attack. Her mother had heart trouble and died of a "shock" at eighty-four. The patient had "slow fever" as a child. At seventeen she had typhoid and at thirty-nine a severe attack of pneumonia. Twelve years and again five years before entry she had acute attacks of swelling and pain in the knees, ankles and hands. Recently she had had some frequency.

Physical examination showed a moderately obese woman with a dusky face and staring anxious eyes sitting up in bed breathing rapidly and forcefully. The mucous membranes were cyanotic. The chest was barrel shaped. The heart was enlarged to the left midaxillary line. The neck veins were distended. There was an apical systolic thrill. The rhythm was grossly irregular. There was a small pulse deficit. The pulse was irregular in rate and force. The heart sounds were of poor quality. There was a loud harsh blowing apical systolic murmur. No diastolic was heard. The blood pressure was 160/115 to 110/68. An electrocardiogram the day after entrance showed auricular fibrillation with ectopic ventricular contractions, rate about 60, right axis deviation, diphasic $T_2$, inverted $T_3$. The lungs showed flatness below the sixth rib on the right posteriorly and below the third rib in front. The liver was palpable and tender on pressure, but no edge was felt. The upper limit of dullness was at the third rib. There was intense edema of the lower legs, over the posterior surface of the thighs, the buttocks and the lower back and slight edema of the anterior abdominal wall to the umbilicus. The pupils were irregular, otherwise normal. The fundi showed marked arteriosclerosis. The reflexes were normal.

The urine was normal in amount. The specific gravity was 1.020 to 1.012. All of four specimens (not catheterized) showed a slight trace of albumin. Three showed white blood cells. One was loaded with white cells. Two showed 5 to 10 red cells per field. The nonprotein nitrogen was 40 to 56 milligrams. Blood examination showed 3.7 to 4.85 million red cells, hemoglobin 65 to 80 per cent, 7,000 to 15,050 white cells, polynuclears 75 per cent. A Hinton test was negative. The carbon dioxide combining power was 55.7 volumes per cent. The blood chlorides were 670 milligrams.

The temperature was 98.1° to 103°, the pulse 51 to 95, the respirations 10 (morphia) to 43.

The day after entry the right chest was tapped and 1100 cubic centimeters of slightly cloudy yellow fluid withdrawn with only slight relief. The fluid showed 77 per cent polynuclears and large mononuclears in clumps, 24 per cent lymphocytes and 78 red blood cells.

The patient continued to be very cyanotic and dyspneic even after beginning diuresis had been established and the edema was slightly less. When she was put in an oxygen tent her color improved and she was more restful. With diuresis she became incontinent. On the fourth day a cardiac consultant noted a localized maximal systolic murmur nearer the apex than the base along with a slight middiastolic murmur at the apex. On the fifth day a second chest tap was done and 450 cubic centimeters of fluid withdrawn with slight relief. For the next four days she did very well. Then she became slightly irrational, though otherwise she was still doing well. On the eighteenth day the blood pressure fell to 110/68 and the following day the temperature rose to 102.4° rectal. Three days later the blood pressure had returned to 145/90. On the twenty-third day another electrocardiogram showed premature beats from varying foci, rate 60, right axis deviation. That night she was very irrational. The following day she was very cyanotic, with signs suggestive of consolidation at the left base and signs of fluid above the angle of the right scapula. The oxygen tent and a right chest tap gave considerable relief. The temperature was 101° to 102.5°. Her condition grew steadily worse. On the twenty-eighth day she died.

### Clinical Discussion

Dr. Richard C. Cabot: The third attack, I take it, was a third convulsion. Climbing the stairs to her bedroom may have had something to do with bringing her here, I suppose.

Whenever we have attacks of unconsciousness without convulsion, associated with dyspnea and apparently with heart disease, we think of heart block, Stokes-Adams disease. It is possible that we have two separate diseases, one giving dyspnea, the other convulsion, but they may be due to the same cause. That could have been ascertained if we knew what her pulse was during the convulsion. Other sorts of convulsions do not send the pulse down to 30 or 35 as we so often see it in heart block.

Another significant fact in the history is occurrence of the two attacks of arthritis, which might have some bearing on the heart trouble. There seems to be some heart trouble in the family, and much the more common family type of heart trouble is the hypertensive rather than the rheumatic, though that also has some tendency to run in families. So the leads in my mind from the history are hypertensive heart disease with heart block and possibly rheumatic trouble.

"The heart was enlarged to the midaxillary line." At sixty-five that almost always means hypertensive trouble, not rheumatic. So far I should suppose this was hypertensive heart trouble, but the right axis deviation is surprising.

"Slight relief" is what we usually get after tapping dropsy of the pleural cavities. But the large number of polynuclears in the fluid is rather surprising. I take it there was clear fluid, and yet I wonder whether she is starting up a fresh infection.

Cardiac consultants are much more apt to hear middiastolics than other people. Anybody can hear a systolic, almost anybody can hear a diastolic, almost nobody can hear a middiastolic at all. It is a special knack. I have taught graduate physicians for a good many years and I never saw one who could hear a middiastolic murmur unless specially taught it. So that in your auscultation it is the thing to make your teachers show you,—make them satisfy you that you hear it. There were years when I did not hear it at all.

Miss Painter: The pleural fluid was slightly cloudy.

Dr. Cabot: Which goes with its having a high percentage of polynuclears and makes us believe it was not merely hydrothorax but an inflammatory exudate.

The two facts here that point to mitral stenosis, which at the beginning I thought very improbable, are right axis deviation in two electrocardiograms and a middiastolic murmur at the apex. Moreover, a thrill at the apex is a very unusual thing without any lesion on the valve, which with hypertensive heart trouble we should not expect. So on the whole it seems to me more sensible to swing over and say that that there was some rheumatic trouble, with of course some hypertensive also, but with the rheumatic probably the more important. There is probably a mitral stenosis. We have not a great deal of basis for that, but I think it is the most rational diagnosis.

No further light, so far as I see, has been thrown upon these convulsions; if they are not Stokes-Adams syndrome I do not know what they are. We have no reason to suppose that they are due to syphilis, or that she would get an ordinary epilepsy so late in life, or that there is enough diminution of kidney function to give her uremic convulsions. I have no doubt the kidneys will show something, because she has a hypertension; but I believe she has a sufficient renal function, although there is some retention of products that should be excreted.

The main cause of death, then, I believe is a combination of hypertensive and rheumatic trouble, with hypertrophy of both sides of the heart and some mitral stenosis. The rest is passive congestion and some terminal infection, and that terminal infection I suppose may be both pleurisy and pneumonia, with a possibility of pericarditis.

A Student: If that was Stokes-Adams' syndrome she would not have been unconscious so long, would she?—an hour they said.

Dr. Cabot: No, you cannot have it lasting an hour. If that is so I shall have to take back track on that.

A Student: The apical systolic thrill you did not mention.

Dr. Cabot: That I suppose to be due to mitral stenosis. You should not get an apical systolic, but an apical presystolic. I have never seen a thrill with pure mitral regurgitation. Dr. Fremont-Smith brings up the question of subacute bacterial endocarditis. That could account for the thrill, of course, and for all the other conditions in the heart. But we have evidence of fever or chills or of leukocytosis or of embolism, and we have no blood culture. When we have so many negative things as that I should say we could not go beyond mentioning bacterial endocarditis as a possibility.

I should have mentioned that there is a low red count which is not easily explained by either of the things I have mentioned, unless we suppose some diminution of the kidney function. She had, on one occasion at least, some anemia.

Miss Painter: On two occasions.

Dr. Cabot: That rather tends to make us believe that there is more lack of kidney function than I should have supposed otherwise, for I do not see any other cause for that anemia.

A Student: What significance do you place on the diphasic T wave?

Dr. Cabot: It has about the same significance as the inverted T wave.

A STUDENT: Then don't you think it would be interesting to know what the $T_1$ showed?

DR. CABOT: We do not know whether she was taking digitalis.

A STUDENT: Can the attacks in the past year be explained by coronary thrombosis?

DR. CABOT: I should say not.

A STUDENT: How about pulmonary heart disease? Dr. White describes that condition as in patients who have emphysema. We have a history of dyspnea and that is about all.

DR. CABOT: I know heart disease from emphysema, but I do not see, as you say, that there is enough evidence here to make us think of it. I have never seen so large a heart from emphysema alone.

A STUDENT: Should we not emphasize the importance of the mitral regurgitation element here, in view of the tremendous left ventricle? We would not get that from a mitral stenosis unless we had a pretty good degree of regurgitation, it seems to me.

DR. CABOT: I am supposing two kinds of heart disease. Hypertensive heart disease does give a big left ventricle, often larger than the rheumatic type. If you have much mitral stenosis you cannot have much mitral regurgitation.

A STUDENT: Aren't the two present together?

DR. CABOT: Yes, but the regurgitation element is not important. It is a rare case in which the regurgitation is the striking thing.

I find that Dr. P. D. White has a consultation, which I will read.

"Congestive heart failure of uncertain origin. I believe the most probable factors are rheumatic mitral valve disease (stenosis and regurgitation), hypertension, and auricular fibrillation in combination. Aortic and pulmonary stenosis are much less likely, though possible; the former (aortic stenosis) may be associated with the mitral stenosis, but there is no proof of it. The right axis deviation by electrocardiogram and the localized maximal systolic murmur nearer the apex than the base, along with the slight middiastolic murmur at the apex, favor the diagnosis of mitral disease. The age, the auricular fibrillation, and the absence of marked right axis deviation are opposed to pulmonary stenosis.

"The 'attacks' during the past year may be explained as due to paroxysms of auricular fibrillation, which has finally become permanent.

"She is very ill now, but digitalis has controlled the signs and symptoms of congestive failure to a large extent (dyspnea and edema). Oxygen might decrease the degree of cyanosis and the mental confusion—it would be fair to see; possibly it might even tide her over the present critical period."

When Dr. White is uncertain we have a right to be. I should not have written in the auricular fibrillation because I supposed that naturally went along with the mitral disease, but he knows more than I do and is probably right in putting it as a separate factor.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Hypertensive heart disease.
Rheumatic heart disease?
Auricular fibrillation.
Congestive failure.
Terminal bronchopneumonia, left.

DR. RICHARD C. CABOT'S DIAGNOSIS

Hypertensive heart disease with rheumatic mitral stenosis.

ANATOMIC DIAGNOSES

Cardiac hypertrophy and dilatation, hypertensive type.
Acute and chronic endocarditis, rheumatic (?), mitral and aortic.
Arteriosclerosis, marked aortic, moderate renal, coronary.
Hydrothorax, right.
Pulmonary atelectasis, moderate, right.
Pulmonary congestion and edema.
Chronic fibrous pleuritis, left.
Chronic perisplenitis.
Cholelithiasis.
Ascites, slight.

DR. TRACY B. MALLORY: We found at autopsy a considerably hypertrophied heart, weighing 500 grams, and there was evidence of a very slight but definite rheumatic heart disease in the form of slight mitral and slight aortic involvement. The lesions were so slight that I found it rather difficult to believe that there could have been any very significant amount of either stenosis or regurgitation, but unquestionably it was rheumatic heart disease, and since the characteristic murmurs were found I think there must have been a little functional damage. I was inclined to agree with Dr. Cabot and, I judge, Dr. White that hypertension was the most probable cause of most of the hypertrophy. There was a considerable degree of generalized arteriosclerosis which included marked narrowing but not complete closure of the coronaries; marked arteriosclerosis of the aorta, and fairly marked renal arteriosclerosis, —benign vascular nephritis. On both the mitral and aortic valves we found a slight acute endocarditis in addition to the old chronic one. I cannot tell whether that was a recurrent rheumatic or whether it was a superimposed bacterial endocarditis. In the marked cases it is easy to tell the difference between the two. In the slight cases I see no way of distinguishing them.

DR. FREMONT-SMITH: That could not have been there very long; she did not have any emboli?

DR. MALLORY: No. This was a matter of the last week or two.

## CASE 19012
## A MAN GOES TO WORK WITH DEATH IMMINENT

### PRESENTATION OF CASE

DR. SOMERS H. STURGIS:* This is the case of a forty-three year old American druggist who came into the hospital in a semistuporous condition. The admission diagnosis was thromboangiitis obliterans.

The history was given by his wife. She said that he had been perfectly well until six weeks before entry, when he came home complaining of generalized abdominal pain and constipation. He was put to bed by his physician and given morphia. He stayed in bed three days and then returned to work. For about five weeks he had no complaint except vague abdominal discomfort and chronic constipation. A week before entry when he went to work he complained of steady dull ache in the left foot. That night he was awakened by a sharp pain in the foot. The foot was white, cold and very tender but not clammy. He vomited his breakfast next morning and was kept in bed. He complained of severe cramping pain in his epigastrium. His physician gave him morphia. That evening he complained of sharp pain in the left chest. For four days after that his left foot continued to be cold and clammy. Then this cleared up a little and he complained of his right foot being painful, cold and tender. He came into the hospital acutely ill at six o'clock in the evening.

On physical examination he was ashen grey and sweating profusely, with very shallow and rapid breathing. The pulse was rapid and very difficult to feel. The blood pressure was 90/40. The heart showed no definite enlargement. The rate was rapid but regular. The sounds were distant and of poor quality. The pulse was hardly discernible. The chest posteriorly showed dullness and absent breath sounds at the angle of the left scapula, with bronchial breathing above this area. The abdomen was greatly distended, tympanitic and tense. There was a distinct impression of a large mass in the suprapubic area. Both legs from midthigh down showed a blotchy red irregular discoloration. They were stone cold and very moist. Both hands were cold and red.

At entrance the temperature was 100.2°, the white cell count 33,000, the pulse 120, the respirations 40.

The next morning at eleven o'clock his temperature was 104.2°, his pulse 150. The respirations were very shallow and rapid. He was catheterized and a small quantity of very highly concentrated urine obtained which was otherwise negative. The mass was still present in the lower abdomen. He went rapidly downhill and died at ten o'clock that evening.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Coronary sclerosis.
Mural thrombus, left ventricle of the heart.
Thrombosis of the superior mesenteric artery.

*Second junior interne on the East Surgical service.

ANATOMIC DIAGNOSES

Arteriosclerosis, aortic, marked.
Coronary sclerosis, left descending branch.
Mural thrombus of the left ventricular wall.
Myocardial infarction.
Thrombosis of the superior mesenteric and splenic arteries.
Gangrene of the small intestine.
Generalized fibrinous peritonitis.
Infarcts of the spleen and kidney.

### PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: The admission diagnosis in this case of course was most obviously in error. I hardly think that anyone could seriously consider Buerger's disease with this story.

The autopsy entirely confirmed the hospital diagnosis. We found a completely occluded coronary artery, an infarct in the left ventricle, a mural thrombus, and then emboli from that which had involved the large vessels in both legs, also a single embolus into the superior mesenteric artery with gangrene of nearly the entire small intestine from a point about 50 centimeters down from the ligament of Treitz to the ileocecal valve. The intestine was black and completely necrotic.

In spite of the great frequency of cardiac infarction and secondary thrombus formation, we only very rarely see a case of mesenteric embolism as a result of it. Do you remember many such cases, Dr. White?

DR. PAUL D. WHITE: No. Mesenteric embolism following coronary thrombosis is very rare.

DR. MALLORY: There is a very small number of cases of Buerger's disease that have a fairly acute onset. The temperature is high and the white count about 20,000. They are very few and far between, however, and the progression of the case is never so rapid as in this case. A white count of 30,000 would hardly be possible.

DR. WHITE: Did you estimate the age of the condition at all?

DR. MALLORY: It could have been from four to six weeks. I think that the period of epigastric pain of which he complained six weeks before entry without much question represents the period of onset of the infarction.

DR. WHITE: It is very important to note that he had only three days' rest and then returned to very hard work. If the diagnosis could have been made by careful study at the time of his attack six weeks before and he had been kept in bed over that period the result might have been different.

DR. MALLORY: One rather extraordinary thing is that he was able to go back to work so soon and worked fairly effectively even after he had an embolism of good size. The leg was blue and cold all the way down to the toes; he did a whole day's work with a leg that was beginning to be gangrenous.

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## BOSTON'S LEADERSHIP IN PREVENTIVE MEDICINE

DURING the years 1901 to 1905 the average infant mortality rate of the city of Boston was 137.8. During the years 1906 to 1910 it was 132.7. In 1920 it was 100.8; in 1931 it was 60.7, and when the deaths are subtracted of those infants brought from outside the city for hospitalization, it was below 60. What are the causes of this significant drop? Obviously, improved water supply and sanitation, pasteurization and sterilization of milk, better housing conditions and a better appreciation of hygiene and infant feeding played their part. There has been another factor, however, in recent years, which must be understood to be appreciated. That factor has been the close, expert supervision, voluntary in nature, which a city wise in health protection has provided for its youngest generation.

To evaluate properly this steadily growing and constantly improving oversight, a bird's-eye view might be taken of its evolution. The Baby Hygiene Association, a private agency, began in 1910 to conduct infant welfare stations. In 1922 it merged with the District Nursing Association to form the Community Health Association. The Division of Child Hygiene of the Boston Health Department was also inaugurated in 1910, conducting no clinics but sending nurses into the homes to weigh babies and supervise their care. Immediately a duplication of work by two agencies which could have been performed by one came into existence. In 1916 the Blossom St. Health Unit was opened by the city, under the able direction of Dr. Wilinsky, and side by side, in the same clinic, the Department of Health and the Community Health Association showed their willingness and their ability to coöperate on the same problems. As a result of this mutual understanding, in 1924 and 1925 the Health Department gradually took over the active clinical program, the deans of the three Class A medical schools were interested in the movement, the clinics were staffed by pediatricians, and the seventeen stations were utilized by the schools for the teaching of preventive pediatrics.

The success of this new venture into public health can be partly measured by the fact that in 1931 65,000 visits were made, with a total enrolment of over 10,000 infants and children of pre-school age. Part of the technique of securing this enrolment consists of a visit by a health department nurse to the home of every new-born infant in all of the less affluent sections of the city.

Aside from the infant clinics, although closely associated with them and under the same able direction, has been the amazing development of Boston's Health Units. Made possible by the wisdom of an able city administration and the generosity of a notable philanthropist, George Robert White, these Units, soon to be eight in number, have served as models for the entire world. Substantially, the health center, a development of the last twenty years, furnishes physical headquarters for all agencies interested in health and welfare work. It is a decentralization of health departmental activities, under a full-time district health officer, bringing to the doors of the people opportunities for health which were formerly secured only with difficulty and with duplication of effort.

The health center is more than this; it is an institution promoting better relationship and interrelationship between public and private agencies, the latter of which maintain their own autonomy. Thus we have under—or on—one roof, baby clinics, pre-school clinics, dental and tuberculosis clinics and solaria; classes for mothers, educational lectures, Red Cross classes, habit clinics, headquarters for the Community Health Association, a visiting physician for the poor, public welfare, Family Welfare, the Catholic Charitable Bureau, the Jewish Charities, a meeting place for the local medical profession

and local headquarters for the Health Department.

As might be expected, the other side of the shield has been and often will be again discussed with heat and vigor. The widening activities of public health and preventive medicine, in their relationship to private practice breed dangerous ground. No change, however beneficent, can come without the travail of readjustment. This much can be said with certainty. Health protection, in a democracy, so far as it can be obtained, is as much the right of the taxpayer as is police protection and fire protection. Whether you like it or not, you live in a democracy, and whether you like it or not, in a democracy the people are going to get what they believe is their due. If the medical profession cannot or will not supply health protection at a reasonable cost, the layman will see that he gets it where he can, as soon as his eyes have been opened to its advantages.

The physician of tomorrow will have his work to do—plenty of it—but if he does not see his own opportunities he will follow where he should lead; he will be the servant of this so-called state medicine, benevolent as it may be, instead of its master.

## APPROVAL OF MEDICAL SCHOOLS IN THE UNITED STATES

It is interesting to summarize the statutory provisions in the United States with reference to discretionary power of approval of medical schools by boards of registration in medicine before whom graduates of the schools appear for examination.

In Florida and New Hampshire, the school must be "satisfactory" to the board and in New York to the "department" (education department of the State of New York). In Michigan, Minnesota, and Vermont, the school must be "recognized" by the Board.

In seven states, the school must be "reputable" as defined by the statute; in ten others "reputable" is not defined but in some of these, other qualifications are added. In South Dakota, a school must be "reputable", "recognized", "in good standing" and "approved".

In Louisiana, Montana, New Jersey, Ohio, and Rhode Island, "good standing" alone is required. In Colorado, Iowa and the District of Columbia the school must be "approved" and there are no further qualifications. In California and Delaware, numerous details are added. In Nebraska, the school must be also "accredited".

There is great variety in the requirement by individual states. In Alabama, the school must have an "adequate" number of full time teachers, "adequate" laboratory facilities and "sufficient" hospital and dispensary material. In South Carolina, the provision is "that applicants in 1920 and thereafter must have such preliminary and medical education as may be prescribed by the board". In Tennessee the medical school must have a curriculum "as high as that of the medical department of the University of Tennessee." In Virginia the medical school must maintain a standard "satisfactory to the State Board of Education".

In some states one finds another form of recognition of possible changes in medical education which cannot be predicted. In West Virginia, there are accepted "graduates of Class A" medical schools as classified by the council on education of the American Medical Association". Arkansas requires a course of study as high as is "adopted by the better class of medical schools of the United States". Indiana requires that medical colleges shall be "up to the average standard of medical education in other states". Nevada says the school must be "recognized as reputable by said board" and have requirements "in no particular less than those prescribed for that year by the Association of American Medical Colleges". In Texas, the school must be "reputable", which means in the statute with "entrance requirements and courses of study as high as those adopted by the better class of medical schools of the United States". New Mexico says "in good standing" which means with a standard "as high as that required by the Association of American Medical Colleges". So in Arizona, Maryland, Oklahoma, Washington and Alaska, the standard of the Association of American Medical Colleges is required for acceptance of schools.

In this connection it is interesting to note, too, the change in style in legislation in recent years. The tendency has been to omit qualifying details. In Colorado, where the statutory qualifications for registration were probably the lowest in the United States, there was passed in 1927 the following law: Chapter 125, Sec. 1. "From and after the date upon which this act goes into effect, no person shall be granted a license to practice medicine in the state of Colorado who is not a graduate of a school teaching the healing art approved by the state board of medical examiners".

The latest law is an act for the District of Columbia taking effect in 1929. It is too long to quote in full, but the following extract gives an idea of the extent of the powers conferred on the board. "The commission (on licensure to practice the healing art) shall establish minimum standards of . . . professional education in the healing art . . . It may determine whether professional schools attain such standards. It shall . . . approve and enter in a proper register every school . . . attaining the prescribed standard . . . The commission may re-determine from time to time, the standing of any school . . . and may revise its register accordingly. The commission shall give no credit for any . . .

diploma or degree emanating from any school . . . not duly registered".

In contrast with every other jurisdiction in the United States, Massachusetts gives its board of registration in medicine no discretionary power of approval of schools. It behooves the citizens of Massachusetts to reflect on the significance of this situation and to insist that the Commonwealth place itself in the company of the most alert and intelligent communities in enacting the law proposed in House Bill No. 106 for the better protection of the public.

## THE MINORITY REPORTS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

On page 33 can be found the address presented by Dr. Nathan B. Van Etten at the New York Academy of Medicine, November 29, 1932. This will complete the series, read at that meeting, which will be published in the *Journal*. Dr. Van Etten was a member of the Executive Committee of the Committee on the Costs of Medical Care and signed the minority report. His paper should be carefully considered especially in relation to the criticisms which have been submitted in another journal respecting the work of the Committee, because Dr. Van Etten takes occasion to commend the diligence, skill and logical presentation of the findings in most of the interpretations of the report. That he should be in divergence with some of the recommendations is to be expected, as has been previously expressed, since the complexities of the matter under consideration by the Committee would not be likely to secure unanimous approval by any group, especially the medical profession. It is, however, most gratifying that one who was willing to sign the minority report found occasion for even so moderate an endorsement of the main report.

In common with many members of the profession, he finds contract practice, as well as certain types of pay clinics, open to serious objection. Every fair-minded person can undoubtedly find certain features of these two forms of medical service which will be, as they have been, subject to criticism. They are recommended in the majority report only so far as they comply with the ethics of medical practice.

Dr. Van Etten reports that the minority claims that overemphasis has been placed on the good examples of group clinics and refers to the opposition respecting certain features of Workmen's Compensation laws. His especial objection seems to be due to the lay control under which these laws are operating. This, however, does not apply in some of the states and, so far as the defects in certain sections of the country with reference to this type of service are concerned, even the majority would agree with him.

His argument with reference to compulsory health insurance is quite in accordance with the sentiment which has been expressed by the majority.

Taken as a whole, the views of the minority, as set forth by Dr. Van Etten, are divergent from those of the majority only in degree and not so much in fact as one would be led to believe.

The signers of both reports agree in the necessity of careful study and consideration of the views presented.

## THIS WEEK'S ISSUE

Contains articles by the following named authors:

D'Errico, Emilio. M.D. Tufts College Medical School 1923. Junior Visiting Surgeon for Obstetrics and Gynecology at the Boston City Hospital. Associate Obstetrician at the Lawrence Memorial Hospital, Medford. Instructor in Obstetrics, Tufts College Medical School. Assistant Junior Surgeon at the Cambridge City Hospital. His subject is "The Management of Acute Inversion of the Puerperal Uterus." Page 1. Address: 27 Bay State Road, Boston.

Quick, Douglas. M.B., University of Toronto Faculty of Medicine 1914. F.A.C.S. Attending Surgeon, Memorial Hospital. His subject is "Radiation in Operable Cancer." Page 8. Address: 350 Park Avenue, New York, N. Y.

Simpson, Burton T. M.D. University of Buffalo School of Medicine 1903. Director, State Institute for the Study of Malignant Diseases, Buffalo, New York. His subject is "Responsibility of the Medical Men in the Control of Cancer." Page 11. Address: 113 High Street, Buffalo, New York.

Parsons, Ruth I. A.B., C.P.H. Assistant in Health Education Research at Massachusetts Institute of Technology 1931-1932. Now, Health Counselor and Teacher of Hygiene in the Beebe Junior High School, Malden, Mass. Address: Beebe Junior High School, Malden, Massachusetts. Associated with her is

Turner, C. E. M.A., Dr.P.H. Professor of Biology and Public Health, Massachusetts Institute of Technology. Chairman of the Health Section, World Federation of Education Associations. Director of Malden Studies in Health Education. Address: Massachusetts Institute of Technology, Cambridge, Mass. Their subject is "Health Education in the City of Boston." Page 19.

Hanflig, Samuel S. A.B., M.D. Harvard University Medical School 1927. Assistant Orthopaedic Surgeon to the Outpatient Department, Beth Israel Hospital. Clinical Assistant Orthopaedist, Outpatient Department, Cambridge Hospital. His subject is "Nail Changes

in Pulmonary Tuberculosis." Page 27. Address: 371 Commonwealth Avenue, Boston.

HARPIN, RAYMOND A. B.S., M.D. Boston University School of Medicine, 1931. Resident Urologist and Resident Physician, Evans Memorial, Massachusetts Memorial Hospitals. His subject is "Caudal Anesthesia in Urology." Page 31. Address: 80 E. Concord Street, Boston.

VAN ETTEN, NATHAN B. M.D. Bellevue Hospital Medical College 1890. Medical Director, Morrisania City Hospital, New York. Trustee, Medical Society of the State of New York and former President. His subject is "The Minority Reports of the Committee on the Costs of Medical Care." Page 33. Address: 300 East Tremont Avenue, New York, N. Y.

SLOCOMBE, CHARLES S. Ph.D. University of London, 1926. Research Consultant of the Personnel Research Federation of New York. Director of Research in Public Accident Prevention for the Institute of Human Relations at Yale University. Consultant in Accident Prevention for the Boston Elevated Railway and, until 1931, Safety Adviser in the Registry of Motor Vehicles in Massachusetts. His subject is "Scientific Method in Motor Vehicle Administration." Page 35. Address: London, England.

## MISCELLANY

### A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

#### HEMORRHOIDS*

BY L. S. MC KITTRICK, M.D.

*Definition.* Hemorrhoids may be defined as groups of tortuous, dilated veins, or varicose tumors in the anal canal. They are arranged in clumps, usually three in number, running lengthwise of the bowel; if internal they are covered entirely by the mucous membrane lining of the intestines, if external by skin, or if of the mixed variety they are covered partly by mucous membrane and partly by skin. They are found in both sexes, are rare in children, infrequent in adolescence, most common in young adults and people of middle age. They are frequently found in old age.

*Causes.* Any number of causes have been given for the development of hemorrhoids. Most of these are only of theoretical importance, many of them without foundation. They may all well be summed up, however, by saying that any condition such as pregnancy, which obstructs the normal flow of blood from the vessels around the rectum and anus, or any activity such as lifting or straining which increases the pressure in these veins may result in the formation of hemorrhoids.

*Symptoms.* The most important single symptom of hemorrhoids, and also the most common, is bleeding. It is the most important because it is also the most common symptom of a much more serious condition, cancer of the rectum. One can live uncomfortably for an indefinite period with occasional bleeding from hemorrhoids. The span of life and comfort is definitely limited, however, by cancer not properly treated. The bleeding from hemorrhoids is usually bright red, most frequently accompanies or immediately follows a movement of the bowels, may be small in amount and only noted on the toilet paper, or may be enough to drip into the water and to color it a deep red. Occasionally, the hemorrhoids may bleed into the lumen of the rectum so that a large clot will form, give the patient the desire to have a movement, and then be passed. The bleeding may or may not be accompanied by a protrusion from the rectum. Rarely is the hemorrhage severe enough to be serious, though occasionally there is sufficient bleeding to be very disturbing, at least to the patient who has it. On the other hand, should bleeding, even though relatively small in amount, continue over a long period of time, a very disturbing anemia may develop which will require active treatment.

Probably the next most characteristic symptom of internal hemorrhoids is the tendency to prolapse. By this we mean the protrusion of a soft, spongy, reddish-purple bunch from the anal opening. This is usually not painful, can as a rule be pushed back by gentle pressure, and most frequently accompanies the straining of a bowel movement. In the more severe cases these protrusions may form a rosette outside of the anus and if not immediately replaced, swelling may occur which will make reduction of the mass impossible, except by operation. This condition is known as strangulation. Occasionally these large protruding masses may ulcerate and at times become infected.

Pain is a symptom which most people seem to associate with hemorrhoids. Such is not the case. There may be a sensation of fullness or of slight discomfort, but uncomplicated hemorrhoids are not painful. If there is pain it means either that some other condition, such as a small, very sensitive ulcer or fissure is present, or that a blood vessel has ruptured producing a small, tender tumor outside of the anus which cannot be reduced. This is known as a thrombosed hemorrhoid.

Itching may or may not be a symptom. This most annoying condition may be due to a number of conditions, hemorrhoids being only one. It is a symptom very commonly associated with hemorrhoids by the laity, but actually one of the less characteristic symptoms of the condition we are discussing.

*Diagnosis.* Most people like to make their own diagnosis. Not long ago a middle-aged lady came to my office saying that, for the past year, she had

*Station WBZ, December 27, 1932, 4:15 P.M.

had hemorrhoids which had not responded to treatment, but saying also that she had never seen a doctor. In explanation of this it was found that she had refused to see her doctor, had told her husband that she had hemorrhoids, and that he must go to the doctor and get something for them. The suppositories which the husband brought home gave only slight, temporary relief. This patient instead of having hemorrhoids had a cancer of the rectum. Through failure to have a careful examination and an accurate diagnosis, one year was lost before proper treatment was obtained. It is, therefore, important that a careful examination be done before accepting a diagnosis of hemorrhoids. It is also important to realize that a patient may have both hemorrhoids and cancer, each of which is contributing to the bleeding. Age is no protection against the more serious condition. It is just as important for the young man or woman of twenty-five to have rectal bleeding accurately explained as it is for their parents or grandparents.

Usually it is very easy to make either diagnosis. It is only fair to say, however, that there are times when a patient may have bleeding due to hemorrhoids which can be accurately diagnosed only after several examinations, preferably done as near the time of the actual bleeding as possible. Examination in these cases must be done not only with the finger but also with a proctoscope, a small instrument with an electric light in the end, which makes it possible to see the inside of the bowel and to examine its condition accurately. It is a very simple but important procedure.

*Treatment.* The treatment recommended depends upon a number of factors. Hemorrhoids that bleed frequently or profusely are in urgent need of treatment, whereas hemorrhoids which occur in the latter months of pregnancy often entirely disappear after childbirth. Small hemorrhoids with only occasional local discomfort or little bleeding respond well to a correction of diet, regulation of the bowels, and the use of local medication, usually in the form of suppositories. The method of treatment, therefore, must be selected according to the individual case. Some of the large prolapsing hemorrhoids can be cured only by operation, properly performed. On the other hand, the majority of internal hemorrhoids, if taken in the early stages, can be very satisfactorily treated by more conservative measures. Of the procedures available at the present time, there is little question but that a carefully done injection of a proper solution into each hemorrhoid by one trained in this work gives the most efficient results. On the other hand, the psychology of the average individual is such that the much more dramatic display occurring in the use of electricity gives to the latter an appeal entirely lacking in such a quietly efficient procedure as injection treatment.

In the injection method a solution which is anesthetic and at the same time produces considerable reaction in the nature of scar tissue is carefully injected into each individual hemorrhoid near its base. This is without discomfort to the patient, is readily done in the physician's office, is followed by little more than a feeling of fullness, and should give excellent results in carefully selected cases. It is desirable not to inject more than one or two hemorrhoids at one sitting. Two to four treatments usually suffice. This method has been used in hundreds of thousands of cases and in proper hands is a safe procedure. The immediate results are good. The patient, however, having this treatment should understand that the results are not always permanent. There is still no method of treatment which gives so high a percentage of permanent cures as operation. However, the injection method is so simple, can be done with so little discomfort to the patient, with no loss of time and at such small expense, that the average person will prefer chancing the possibility of subsequent injections to taking the time necessary for operation unless, of course, the hemorrhoids are of the type where operation is definitely indicated.

The electrical treatment of hemorrhoids, like injection, should be restricted to uncomplicated internal hemorrhoids. There are several different methods of applying electricity to hemorrhoids. Of these, the use of the high frequency current—either electrodesiccation or electrocoagulation — is most widely used. Inasmuch as these procedures hold no distinct advantage over other operative methods and require special apparatus and training, they will probably not replace the former in cases where operation is definitely indicated. Galvanism, another form of electricity used in these cases, gives excellent results at times, but is less certain, takes much longer, and is so much more complicated than injection that it is not to be recommended.

The treatment of external hemorrhoids is quite different from that of internal hemorrhoids, and to use the conservative treatments just described might be dangerous. The external hemorrhoid should not be treated by electricity nor by injection. If the external hemorrhoid is the result of the rupture of a blood vessel in a small hemorrhoid on the outside with the easily felt, tender, painful swelling, it is best treated by injecting a small amount of novocain and removing the clot. Immediate relief from pain is obtained and within a few days the area is healed up. This does not require either going to the hospital or staying in bed and gives very satisfactory results. The other type of external hemorrhoid, consisting of tabs of flesh on the outside of the skin immediately around the anus, must be removed surgically. Injection of external hemorrhoids would result in painful ulcerations very slow to heal.

*Summary.* To summarize, hemorrhoids may be described as varicose tumors involving the veins in the anal canal. The most common symptoms are hemorrhage and prolapse. Hemorrhage is the most important because it is also a common symptom of the much more serious condition, cancer. Hemorrhoids may be divided into two groups, internal and

external. The former are covered by the lining of the intestinal tract, the latter by skin. The former bleed and prolapse. Whenever bleeding occurs a careful examination must be done to exclude other causes of bleeding from the rectum. In treating internal hemorrhoids, the large extensive ones—particularly those protruding from the rectum—must be treated by some form of operation. Those less advanced, entirely internal, which tend to come out but are readily replaced, are satisfactorily treated in the office by the injection of a proper solution by one trained in its use. This method is definitely advocated in preference to any form of electrical treatment because it is safer, more certain, and less expensive. External hemorrhoids requiring treatment can be taken care of by operation only. Operation, however, for external hemorrhoids is a minor procedure.

## COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1931 AND SEVEN YEAR AVERAGE

MONTH ENDING DECEMBER 10, 1932

| | 1932 | | | | | 1931 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Diseases | Week ending Nov. 19 | Week ending Nov. 26 | Week ending Dec. 3 | Week ending Dec. 10 | Average cases reported for week corresponding to Dec. 10 for past seven years | Week ending Nov. 21 | Week ending Nov. 28 | Week ending Dec. 5 | Week ending Dec. 12 |
| Cerebrospinal Men. | 2 | 1 | — | — | 2 | — | — | — | 1 |
| Chicken Pox | 113 | 58 | 103 | 124 | 114 | 73 | 69 | 85 | 124 |
| Diphtheria | 3 | 8 | 9 | 11 | 28 | 4 | 2 | 6 | 5 |
| Dysentery Amoebic | — | — | 1 | — | — | — | — | — | — |
| Dysentery Bacillary | — | — | — | — | — | 3 | 2 | — | — |
| Encephalitis Epid. | 1 | — | — | — | — | — | — | 1 | 2 |
| German Measles | — | 1 | 2 | 2 | 7 | 1 | 7 | 10 | 7 |
| Influenza | 29 | 10 | 18 | 7 | 8 | 8 | 1 | 12 | 3 |
| Malaria | — | — | — | — | — | — | — | 1 | — |
| Measles | 11 | 6 | 13 | 23 | 75 | 17 | 44 | 38 | 53 |
| Mumps | 70 | 64 | 52 | 72 | 44 | 54 | 13 | 49 | 25 |
| Paratyphoid Fever | — | — | — | — | — | 2 | 1 | — | — |
| Pneumonia (Broncho) | 40 | 18 | 50 | 32 | 25 | 26 | 21 | 23 | 23 |
| Pneumonia (Lobar) | 30 | 19 | 27 | 31 | 39 | 25 | 43 | 27 | 27 |
| Poliomyelitis | — | — | — | — | — | 3 | 3 | 2 | 4 |
| Scarlet Fever | 55 | 64 | 73 | 90 | 62 | 58 | 44 | 52 | 48 |
| Septic Sore Throat | — | 2 | — | 1 | 2 | 4 | 3 | 1 | 4 |
| Smallpox | — | — | — | — | 6 | — | — | 39 | 15 |
| Trichinosis | 1 | — | — | — | — | — | — | — | — |
| Tuberculosis (Pul.) | 15 | 29 | 37 | 32 | 24 | 17 | 15 | 38 | 27 |
| Tuberculosis (O. F.) | — | — | — | 1 | 2 | 1 | 2 | 2 | 2 |
| Typhoid Fever | 1 | 1 | — | 1 | 3 | 1 | 2 | 2 | 1 |
| Typhus Fever | — | — | — | — | — | 1 | — | — | — |
| Undulant Fever | 4 | 2 | — | 1 | — | 1 | 1 | — | 1 |
| Whooping Cough | 75 | 66 | 84 | 109 | 55 | 40 | 31 | 41 | 59 |
| Gonorrhea | 34 | 22 | 37 | 23 | 39 | 71 | 31 | 32 | 67 |
| Syphilis | 30 | 55 | 75 | 45 | 39 | 44 | 48 | 49 | 82 |

Remarks: No cases of Asiatic cholera, glanders, plague, or yellow fever during the past seven years.

## RECENT DEATH

**FRANCIS**—DR. GEORGE HILLS FRANCIS, for 40 years a general practitioner in Brookline and of the fifth generation of a family of physicians, died January 1, at Brandon Hall, 1501 Beacon Street, Brookline, at the age of 72.

Dr. Francis, whose medical training was received at Harvard and in Vienna and Dublin, had been a medical inspector in the Brookline Public Schools for more than five years.

Born the son of Dr. Tappan Eustis and Helen (Shurtleff) Francis, in Brookline, he attended Noble's school and was graduated from Harvard College in 1882 and from the medical school five years later. In the same year he began practice in Brookline, having served, while a student at Harvard, an internship in a Dublin hospital and as house

officer on the surgical side of the Massachusetts General Hospital.

At his retirement from practice, 10 years ago, he had been a former president of both the Brookline Medical Club and of the Norfolk District Medical Society, and a member of the Massachusetts Medical Society.

He is survived by his widow, three sons and a brother, Dr. Carleton Francis of Brookline.

## NOTICES

### RADIO HEALTH MESSAGES

JANUARY-FEBRUARY-MARCH, 1933

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZ. Tuesdays, 4:15 P.M.

January
10 Hemorrhagic Diseases
17 Insurance Against Diphtheria
24 What Is New in Infant Feeding?
31 Cancer

February
7 The Heart
14 Your Title to a Job
21 Why a Health Department?
28 Effects of Fatigue

March
7 Vacation Health
14 The Use and Abuse of Serums and Vaccines
21 Can We Prevent Diabetes?
28 Hobbies and Health

STATE HOUSE BROADCAST

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays, 12:45 P.M.

Health Subjects of Public Interest discussed by the Division Directors of the Department.

RADIO HEALTH FORUM

Queries from the public are answered under the sponsorship of the Department of Public Health.

Courtesy WEEI. Fridays, 4:50 P.M.

Questions on Health and Prevention of Disease may be sent to Radio Health Forum, State Department of Public Health, State House, Boston.

### CLINICS IN MEDICINE AT PETER BENT BRIGHAM HOSPITAL

On Thursdays at 3:30 P. M. in the Amphitheatre of the Peter Bent Brigham Hospital Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard, and Physician-in-Chief, Peter Bent Brigham Hospital, will give a series of clinics which members of the medical profession are cordially invited to attend. The next clinic will be given on January 12.

Physicians and medical students are also invited to attend ward rounds of the Medical Staff of the Peter Bent Brigham Hospital held from 10-12 o'clock on Saturdays, as well as a clinical-pathological demonstration immediately following these rounds.

### HARVARD MEDICAL SCHOOL

OMISSION OF COURSE

The course in Diagnosis and Treatment of Malignant Disease, scheduled to be given January 9-21, by the Harvard Medical School Courses for Graduates, will not be given in 1933.

### HARVARD UNIVERSITY

FREE PUBLIC LECTURES ON MEDICAL SUBJECTS

The Faculty of Medicine of Harvard University offers a course of free public lectures on medical subjects, to be given at the Medical School, Longwood Avenue, Boston, on Sunday afternoons, beginning January 8 and ending March 26, 1933. The lectures will begin at four o'clock and the doors will be closed at five minutes past the hour. No tickets are required.

SUNDAY AFTERNOONS AT FOUR O'CLOCK

January 8—Mr. N. W. Fradd: Balancing Your Health Budget.

January 15—Dr. W. B. Castle: Anemia.

January 22—Dr. G. H. Bigelow: The Depression and Health.

January 29—Dr. W. B. Lancaster: Sparing the Eyes.

February 5—Dr. G. P. Grabfield: Rheumatism.

February 12—Dr. G. H. Wright: Color Changes in the Mouth and Teeth: an Aid in Diagnosis of Systemic Disease.

February 19—Dr. W. H. Robey: Let the Head Govern the Heart.

February 26—Dr. H. R. Viets: Nerve, Nerves, and Nervousness.

March 5—Dr. E. L. Oliver: The Care of the Skin and Scalp.

March 12—Dr. Shields Warren: Cancer and Radiation Therapy.

March 19—Dr. Randall Clifford: The Tuberculosis Problem Today.

March 26—Dr. W. G. Smillie: A Discussion of the Common Cold.

## REPORTS AND NOTICES OF MEETINGS

### GREATER BOSTON BICKUR CHOLIM HOSPITAL STAFF MEETING

The staff of the Greater Boston Bickur Cholim Hospital (Jewish Hospital for Chronic Diseases) held its monthly meeting on December 19, 1932.

Dr. Hyman Morrison of the Beth Israel Hospital gave an informal discussion of "Thrombosis of the Coronary Arteries," preceding it with a demonstration of three hearts of patients who had recently died of this disease. A résumé follows:

As an entity this disease has become known only during the last ten years. Yet, we find that here and there it has been mentioned and suspected by different authors in the last few centuries. So in Italy, Morgagni (1682-1771) gave a good account of this disease and, in 1768, William Heberden in England was the first to coin the name of Angina Pectoris. Then came Edward Jenner, the discoverer of vaccination, who accurately described this disease. In our times, in the United States, William Townsend Porter contributed considerably to the knowledge of coronary thrombosis by his experiments on dogs. Herrick, too, enriched our knowledge of this subject.

As to symptoms, immediate ones are pain and collapse, pain coming from ischemia as a result of cutting off the blood circulation. Besides the direct substernal pain, there is the so-called referred pain usually to the left arm. The collapse is brought by the shock. A clammy cold perspiration appears, and the blood pressure falls,—a fact of importance in differential diagnosis between coronary thrombosis and angina pectoris, where the B. P. is usually not affected and even occasionally rises.

If the patient survives, the symptoms due to myocardial insufficiency appear. Heart sounds become distant. Arhythmia is noticeable. Occasionally there is ventricular fibrillation, which leads to death. Edema, cyanosis, and pulmonary edema may supervene. Later on, a group of symptoms appear due to infarction. After 12 hours there is fever, leucocytosis and fibrinous pericarditis. If the process is extended to the endocardium, it leads to mural thrombi, which in their turn may cause emboli to be carried with the bloodstream to any part of the body, depending on whether the left or the right coronary is thrombosed. The affected wall of the heart may be thinned to such an extent as to lead to rupture.

Chronic myocarditis is the final outcome, if the patient is fortunate enough to survive the primary attack.

M. J. Konikow, M.D., *Recorder.*

## THE WILLIAM HARVEY SOCIETY

Dr. Samuel J. Kopetzky, Professor of Otology, New York Polyclinic Medical School and Hospital, addressed the meeting of the William Harvey Society of Tufts College Medical School at the Beth Israel Hospital on December 10, 1932. His subject was "Problems Concerned in Otitic Meningitis." Dr. Harry J. Inglis, Professor of Otolaryngology, Tufts College Medical School, acted as Chairman.

The upper respiratory passages may act as a portal of entry for the invading organism of a streptococcic meningitis, as they do in epidemic cerebrospinal meningitis. Again, there may be simultaneous infection of the middle ear and mastoid process, on the one hand, and of the meninges, on the other, from the same source. Then there is a group of cases in which the meninges are involved secondarily, after an infectious lesion has located itself in the middle ear and mastoid process. This last group is of especial interest to the otologist; and it is in these cases that careful observation, early diagnosis in the prodromal stages and courageous treatment for eradication of the intermediary lesion afford an opportunity for brilliant therapeutic results.

As in any infectious process, the symptoms are due more to reactions in the tissues than to the mere presence of pathogenic organisms. The meninges are very active tissues; and more recent studies indicate that we have a circulating cerebrospinal fluid in addition to a lymphatic system of drainage and a blood supply innervated by both the vagus and the sympathetic systems.

Dr. Kopetzky believes that the products of brain tissue metabolism, among which choline and lactic acid play a large part, may be capable of stimulating these nervous systems into activity and regulating not only the blood supply to the brain but also the circulation of the cerebrospinal fluid. A stoppage of the cerebrospinal fluid circulation with no other lesion is known to result in dire consequences. It occurs in meningitis due to the closure of certain foramina, which impedes the circulation.

Among other things, Dr. Kopetzky feels that chemical studies of the cerebrospinal fluid will often give evidence of infection before bacteriological studies are positive; and he outlined the following findings in 125 cases recently studied by him:

1. There is more chloride in normal spinal fluid than in the blood plasma of the same patient, examined at about the same time. In meningitis this gradient tends to be eliminated; and the values found in the spinal fluid and the blood plasma are more nearly alike.

2. In meningitis there is a decrease in the bicarbonate content of the spinal fluid (value is often found as much as 33 per cent below that of the blood plasma).

3. In meningitis the spinal fluid shows a marked increase in lactic acid. The blood plasma in meningitis also shows an increase in its lactic acid content, due probably to the temperature elevation and other factors of general import. The increase noted in the spinal fluid is more marked than the increase found in the blood of the patient at the same time. In other words, the general increase in blood plasma and spinal fluid is not proportionate; the rise is more marked in the spinal fluid.

4. The PH of the spinal fluid in meningitis is much lower than that of either the normal spinal fluid or the normal blood plasma. It is lower than that of the blood plasma in meningeal cases.

In making these studies, a comparison of the findings of the elements in the cerebrospinal fluid in relation to the finding of the same elements in the blood plasma must be made and interpreted in

accordance with the new law of electrodynamics known as the Donan Law.

It is well recognized that an infection extending from the internal ear reaches the posterior cranial fossa, that one from the lateral sinus progresses toward the anterior cranial fossa and that an infection from the petrosal pyramid advances to the middle cranial fossa. The importance of careful observation to determine the direction which the infection takes toward the meninges was stressed.

Dr. Kopetzky then developed the picture of the lesion while in the petrosal pyramid and described the clinical entity of petrosal infections. He touched upon the necessity for repeated and careful observation and comprehension of transient symptoms—transient palsies, transient nystagmus and transient signs exhibited by intracranial nerves. The outstanding symptoms of this lesion is the severe retro-orbital pain due to involvement of the first division of the fifth nerve. Roentgenograms are of incalculable diagnostic assistance; and plates illustrating several cases were presented.

Dr. Kopetzky emphasized that there is no established treatment for streptococcic meningitis which has given generally good results. Surgical drainage has been the goal of most therapeutic attempts; but it does not cope with the factors present in this lesion and it should not be indiscriminately applied because of the diversities in the character of these cases.

Dr. Kopetzky ended his presentation by a discussion of the suggestions advanced for the treatment of streptococcic meningitis by Kohlman (i.e., intercarotid injection of antibacterial serums), by Eagleton (ligature of the internal carotid to place the parts at rest) and, more recently, by Kubie and Kerrison (the injection of hypotonic solutions to increase cerebrospinal flow where circulation of the fluid has been interrupted by surgical entrance into the circuit of circulation).

## THE SUFFOLK DISTRICT MEDICAL SOCIETY

The Suffolk District Medical Society met in the amphitheatre of the Peter Bent Brigham Hospital on November 30, 1932, at 8:15, and heard four interesting discussions on a variety of subjects. Dr. William H. Robey presided.

Dr. Walter B. Cannon presented the first paper on "How Emotions Disturb the Body." The speaker pointed out that Claude Bernard was the first physiologist to call attention to the two environments, the external and the internal, among and by which we live. Dr. Cannon stated that it was his purpose to discuss the function of the latter, especially with regard to its constancy.

It is well known to medical men that the body has certain constant physicochemical relationships that are not easily upset, such as blood sugar, blood calcium, blood $P_H$, etc. The mechanism for maintaining this constancy is to be found in the sympathetic portion of the autonomic nervous system, in coöperation with the secretion of adrenin.

Laboratory experiments have shown that sympathectomized cats are no longer so able to maintain the constancy of their internal environment as normal animals. These creatures show certain defects when excited and struggling. (1) They cannot mobilize their sugar (2) there is a fall in blood pressure, (3) the blood count does not rise, while in an excited normal animal it goes from six million plus to nine million, (4) on exposure to cold the protective erection of hair does not take place, the surface vessels are not constricted, and the body temperature falls, although compensated for in some degree by shivering, and (5) no discharge of adrenin occurs.

The constancy of the internal environment is subject to many tendencies to change, due to external and internal influences. All of these tendencies are obviated or compensated for by the operation of the sympathetic system. This system hence goes into action in times of emotional stress, and the result and effects of its action are summed up in the phrase "preparation for action". If there is no action and resolution the sympathetic system may become profoundly disturbing, and, instead of setting things right it may set things wrong. Ordinarily there is not much control of emotions by the will. Conditioned emotional upsets occur just as do other conditioned reflexes, and a substitution of a part of an emotional scene may well provoke the original response at a later time.

Dr. Joseph C. Aub delivered the next address, speaking on "Exophthalmic Goiter and Vitamin D Deficiency." Little is really known about quantitative methods for studying and evaluating vitamins. It is possible that the vitamin requirement varies with the caloric needs of an individual. This might well be studied in hyperthyroidism. However, his studies on two patients with exophthalmic goiter were negative so far as showing any connection between this disease and vitamin D deficiency was concerned. That some such relationship did exist was for a time thought possible when it was noted that in both exophthalmic goiter and in vitamin D deficiency (Blumgart) there is an analogous great excess of calcium excreted in the feces and urine. Large doses of viosterol, while raising the blood calcium as much as one milligram, had no effect in exophthalmic goiter on either the calcium excretion or on the basal metabolic rate.

Discussion question: Does viosterol ever do any harm? Dr. Aub: In great excess either from overdosage or from the use of over-irradiated viosterol it may raise the blood calcium and cause deposition of calcium in the kidneys and other tissues.

Dr. Wilson G. Smillie presented the results of "Field Studies in Common Colds." His first task was to find a completely isolated community, and this led him from Labrador through America to the West Indies. A relatively isolated community was found at St. Johns, the Virgin Island group, none other than Stevenson's "Treasure Island." Complete throat studies revealed that hemolytic strepto-

cocci and pneumococcus types I and II were not found in any throats. So far as climate is concerned, the temperature variation throughout the entire year is only ten degrees. An epidemic of colds commenced on the island after transmission from the crew of a mail boat. The incubation period was 48 hours. No complications were present in any of the cases, and no change in the bacterial flora of the nasopharynx was noted in the patients.

The expedition next went to Spitzbergen. Here the last boat left in September, and the community was isolated until the following June. No colds were present after October, even though the miners lived in overheated, overcrowded barracks, and went out into the Arctic winter to work each day.

The first boat arrived the following June. The first cold occurred in the doctor who took throat cultures on the crew of this boat one day before the boat docked. Next the boat mail man caught a cold, and soon an epidemic was spreading throughout the entire community. The epidemic was of short duration, the incubation time was from 36 to 48 hours, and only a few persons were immune. No organism that could be incriminated was cultivated. The immunity to subsequent attacks was of at least six weeks' duration for every person. After this period, a few secondary attacks occurred.

An interesting story was told of a trapper, who, after having a cold in Spitzbergen, fell through the ice on his way home three weeks later, and immediately developed an acute upper respiratory infection. He may have had pneumonia. The interesting feature in relation to this attack was that it occurred several weeks after his contact with others. Dr. Smillie concluded, (1) that the organism causing the common cold could not be cultivated, (2) that, nevertheless, there is a specific agent transmitted by direct contact, (3) that the incubation period is from 36 to 48 hours, (4) the immunity lasts for a considerable time after an attack.

DISCUSSION

Q.—Were the earlier colds less severe or more severe than the later ones?

A.—Dr. Smillie: There was no difference.

Q.—How long is the period of infectiousness of a person with a cold?

A.—Dr. Smillie: Three days, approximately.

Q.—Will exposure alone cause a cold?

A.—Dr. Smillie: I don't know.

Q.—Why are there more colds in winter than in summer if climate is not so important?

A.—Dr. Smillie: I don't know.

Q.—Are cold vaccines of any value?

A.—Apparently, yes, in many instances. Theoretically they should be of real value in the prevention of complications of the acute cold.

Dr. Lloyd D. Felton was the last speaker, and discussed "Results of Serum Therapy in Pneumonia," tracing the seven years of work that he has been doing along this line. He has recently been interested in removing the toxic substances and concentrating the available sera.

There must be some delicate mechanism which determines why certain people develop pneumonia, for all of us carry the bacteria and yet only a few actually contract the clinical disease. We may some day be able to influence this adjustment or mechanism in a favorable way. There are at least two or three pneumococcus fractions which are capable of producing immunity in mice. Perhaps the one or two used in the production of immune serum in horses may yet be improved.

Dr. Felton presented the following statistics:

A. Treatment without regard to the day of the disease, and with the old serum which had to be used in large amounts.

| Pneumococcus | | Cases | Deaths | Mortality |
|---|---|---|---|---|
| Type I | With serum | 817 | 150 | 18.4% |
| | Controls | 666 | 206 | 30.9% |
| Type II | With serum | 542 | 189 | 34.9% |
| | Controls | 544 | 243 | 44.7% |

B. Treatment begun before fourth day of disease, and with concentrated serum.

| Pneumococcus | | Cases | Deaths | Mortality |
|---|---|---|---|---|
| Type I | With serum | 234 | 26 | 11% |
| | Controls | 75 | 21 | 28% |
| Type II | With serum | 139 | 33 | 24% |
| | Controls | 108 | 47 | 44% |

## LAWRENCE MEDICAL CLUB

The regular monthly meeting of the Club was held at the Medical Library of the Lawrence General Hospital on Monday, December 12, with Chas. J. Burgess, M.D., of Lawrence as the host. Thirty-two physicians were present.

The Chairman for the evening was J. Forrest Burnham, M.D., of Lawrence who introduced G. Philip Grabfield, M.D., of Boston, Instructor in Pharmacology at Harvard University Medical School, and Associate in Medicine at Peter Bent Brigham Hospital, as the reader. The subject of the paper was Proprietary Medicine, with Especial Reference to the Newer Hypnotics (one hour).

Dr. Grabfield outlined the excellent work of the Council on Pharmacy and Chemistry of the American Medical Association during the past quarter of a century. He mentioned the fact that Reid Hunt, M.D., of Boston, Professor of Pharmacology at Harvard Medical School, had occupied very efficiently the position of Chairman of the Council for the latest decade. He described the original publication of the Council, the New and Non-Official Remedies, as containing all worthwhile medicinal preparations, between each two decennial revisions of the United States Pharmacopoeia, and outlined its very great value to all physicians. The Epitome of the U. S. P. and the National Formulary, published by the A. M. A., was shown, and its very handy and compact nature described. Its size permits its being carried in the pocket.

A complete list of the newer hypnotics was presented on the blackboard and their relative properties and grades of value to the physician were pre-

sented, many of the clinical features being the results of bedside tests at a Boston hospital. The intelligent use of choral, that often used drug of our fathers, was favorably mentioned.

A buffet lunch was served and a lively question period ended the meeting.

## BOSTON MEDICAL LIBRARY IN CONJUNCTION WITH THE SUFFOLK DISTRICT MEDICAL SOCIETY

The January meeting of the Boston Medical Library will be held in conjunction with the Suffolk District Medical Society on Wednesday, January 25 at 8:15 P.M., in John Ware Hall.

Psychiatry Today. Dr. Ralph A. Noble, Director, Division of Psychiatric Education, National Committee for Mental Hygiene.

Psychiatry in Relation to Hospital Practice. Dr. Donald J. MacPherson.

Psychiatry in Relation to Private Practice. Dr. Arlie V. Bock.

Discussers: Dr. C. Macfie Campbell, Dr. Charles W. Hutchinson, of Concord, Dr. Fresenius Van Nüys, Weston.

WILLIAM H. ROBEY, M.D., *President*,
HILBERT F. DAY, M.D., *Chairman*.

## HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance), Tuesday evening, January 10, at 8:15 o'clock.

PROGRAM

Presentation of Cases.

The Medical Practices of the Aboriginal Americans. By Dr. Eric Stone of Providence, R. I.

JOHN HOMANS, M.D., *Secretary*.

## MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

The January meeting of the Middlesex East District Medical Society will be held in Legion Hall in Wakefield, on Wednesday, January 11. Dinner will be served at 6:30.

Dr. W. G. Smillie has agreed to speak on "Respiratory Infections."

ALLAN R. CUNNINGHAM, M.D., *Secretary*.

## THE WILLIAM HARVEY SOCIETY

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, will address The William Harvey Society of Tufts College Medical School on Thursday, January 12, 1933, at one o'clock, in the auditorium of the medical school, instead of Friday evening at eight o'clock in the Beth Israel Hospital as previously announced. Dr. Fishbein will discuss the minority report recently published by the Committee on the Costs of Medical Care.

## FRANKLIN DISTRICT MEDICAL SOCIETY

The next meeting of the Franklin District Medical Society will be held at the Weldon, Greenfield, at 11 A.M., on January 10.

Dr. Harvey W. Van Allen of Springfield as guest speaker will present as his subject "Lung Cavities—Their Control a Necessity to Arrest of the Disease. Treatment by Various Methods."

The doctor's talk will be illustrated by lantern slides.

CHARLES MOLINE, M.D., *Secretary*.

## WATERTOWN PHYSICIANS' SOCIETY

The next meeting of the Watertown Physicians' Society will be held Tuesday, January 10, at 128 Mt. Auburn Street, Watertown, at 8:30 P.M. The speaker will be Dr. William J. Macdonald. Subject: "Some Common and Important Skin Diseases" (Illustrated by Lantern Slides).

All interested physicians cordially invited.

EUGENE F. GORMAN, M.D., *Secretary*.

## MASSACHUSETTS GENERAL HOSPITAL

A Clinical Meeting of the Staff of the Massachusetts General Hospital will be held in the Moseley Memorial Building on Thursday, January 12, at 8:15 P.M.

PROGRAM

The Costs of Medical Care. Dr. Walter P. Bowers, Dr. John M. Birnie.

Discussion to be opened by Dr. Frederick T. Lord, Dr. Robert B. Greenough, Dr. Arthur R. Crandell, and Dr. Frederic A. Washburn.

Physicians, medical students and nurses are cordially invited.

COMMITTEE ON HOSPITAL MEETINGS.

## SOUTH END MEDICAL CLUB

The next regular meeting of the South End Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, on Tuesday, January 17, at 12 noon.

The speaker will be Dr. Horace Binney, Surgeon-in-Chief, Boston City Hospital, Professor of Surgery, Tufts College Medical School, and his subject: "Pulmonary Embolus and the Operative Treatment."

All physicians are cordially invited to attend. There will be the usual luncheon at 1 o'clock.

## NEW ENGLAND HEART ASSOCIATION

A special meeting has been arranged for Wednesday afternoon, January 11, at four-thirty in the John Ware Hall of the Boston Medical Library for the following discussion:

*The Social Problem of the Child with Heart Disease*

1. Survey of the resources for children with heart disease in the clinics and hospitals of Boston. Follow-up cards used at the Children's Hospital. Miss Mabel R. Wilson.

2. Boston's resources for children with heart disease. Mrs. T. Grafton Abbott.

3. The rôle of the medical social worker in the home care of children with heart disease. Miss Edith M. Terry.

4. Primer for use in the families of children with heart disease. Dr. Howard B. Sprague.

5. Education of parents, teachers, and patients in rheumatic fever and rheumatic heart disease. Dr. T. Duckett Jones.

Discussion to be opened by Dr. Paul Emerson and Miss Ida Cannon.

All those interested, doctors, medical students, social workers, and nurses are invited to attend.

PAUL D. WHITE, *President*,
MABEL R. WILSON, *Vice-President*.

## SOCIETY MEETINGS
## CONGRESSES AND CONFERENCES

**January 8 - March 26**—Harvard University, Free Public Lectures on Medical Subjects. See page 51.

**January 10**—Harvard Medical Society. See page 55.

**January 10**—Watertown Physicians' Society. See page 55.

**January 11**—New England Heart Association. See page 55.

**January 12**—Clinics in Medicine at Peter Bent Brigham Hospital. See page 51.

**January 12**—Massachusetts General Hospital. See page 55.

**January 12**—The William Harvey Society. See page 55.

**January 17**—South End Medical Club. See page 55.

**January 19 - May 17**—New England Physical Therapy Society. See schedule on page 1010, issue of December 1.

**January 25**—Boston Medical Library in conjunction with the Suffolk District Medical Society. See page 55.

**February 6-10**—The American College of Physicians. See page 765, issue of October 27.

**February 8 - April 5**—The New England Heart Association. See page 1011, issue of December 1.

**February 17 and 18**—The New England Hospital Association. See notice on page 911, issue of November 17.

## DISTRICT MEDICAL SOCIETIES

### ESSEX NORTH DISTRICT MEDICAL SOCIETY

**January 13**—See notice on page 1235, issue of December 29.

**May 3**—Wednesday, Annual Meeting. Program to be announced.

### ESSEX SOUTH DISTRICT MEDICAL SOCIETY

**Tentative Program**

**Wednesday, February 1, 1933**—Council Meeting, Boston.

**Wednesday, March 8, 1933**—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Soma Weiss, Boston City Hospital. Subject: Arterial Hypertension.

**Wednesday, April 5, 1933**—Essex Sanatorium, Middleton. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Wilson G. Smillie, Professor of Public Health Administration, School of Public Health, Harvard University. Subject: Common Colds.

**Thursday, May 4, 1933**—Censors' Meeting, Salem Hospital, 3:30 P. M.

**Tuesday, May 9, 1933**—Annual Meeting. Salem Country Club, Forest Street, Peabody. Golf in afternoon; greens fee $2.00. Dinner at 7 P. M. Speaker: Dr. George Burgess Magrath. Subject to be announced later. Ladies invited.

R. E. STONE, M.D., Secretary.

### FRANKLIN DISTRICT MEDICAL SOCIETY

**January 10**—See page 55.
Meetings will be held at the Weldon in Greenfield on the second Tuesday of March and May.

CHARLES MOLINE, Secretary.

### MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

The program of the Middlesex East District Medical Society for the coming year is as follows:

**January 11**—See page 55.

**March 15** at Melrose.

**May**, at the Meadowbrook Club, Reading.

ALLAN R. CUNNINGHAM, Secretary.

### MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

**January 13**—See notice on page 1123, issue of December 15.

### NORFOLK DISTRICT MEDICAL SOCIETY

**January 31, 1933**—Roxbury Masonic Temple, 8 P. M. Subject: "Stomach Surgery"—Motion pictures. Dr. William R. Morrison.

**February 28, 1933**—Time and place to be announced. "The Diagnosis and Treatment of Anemia," by Dr. William P. Murphy.

**March 28, 1933**—Time, place and subject to be announced. Speaker will be Dr. J. P. O'Hare.

**May**—Annual Meeting. Time, place and subject to be announced.

FRANK S. CRUICKSHANK, M.D., Secretary.
1695 Beacon Street, Brookline.

### SUFFOLK DISTRICT MEDICAL SOCIETY

**Wednesdays at 8:15 P. M.**

**January 25, 1933**—General Meeting in association with the Boston Medical Library at the Boston Medical Library. See page 55. (Boston Medical Library.)

**March 29, 1933**—Clinical Program, Massachusetts General Hospital.

**April 26, 1933**—Annual Meeting. Election of Officers. Scientific Program—Titles and speakers to be announced later.

The Medical Profession is cordially invited to attend all of these meetings.

WILLIAM H. ROBEY, M.D., President,
LELAND S. McKITTRICK, M.D., Secretary,
HILBERT F. DAY, M.D., Boston Medical Library.

### WORCESTER DISTRICT MEDICAL SOCIETY

**Wednesday, January 11**—Dinner and meeting at the Worcester City Hospital. Paper by Dr. Morris Fishbein, Editor of the Journal of the American Medical Association.

**Wednesday, February 8**—Dinner and scientific meeting at the Worcester State Hospital. Program to be announced later.

**Wednesday, March 8**—Dinner and scientific program at the Memorial Hospital, Worcester. Program to be announced later.

**Wednesday, April 12**—Dinner and scientific meeting at the Rutland State Hospital. Scientific program to be announced later.

**Wednesday, May 10**—The Annual Meeting. Place and program to be announced later.

ERWIN C. MILLER, Secretary.

## BOOK REVIEW

*Posture: Its Relation to Health.* By FRANK D. DICKSON, M.D., Orthopedic Surgeon, Saint Luke's Hospital and The Kansas City General Hospital, Kansas City, Mo. Published by J. B. Lippincott Company. Price $5.00.

This volume of 207 pages and 118 illustrations deals directly in an attractive manner with the relation of body mechanics to strain, both general and local. It is as direct a statement of the functional predisposing factors in strain as any other orthopedic treatise as yet published, and is, therefore, strongly recommended to all students of orthopedics.

The author furthermore develops the relationship between mechanical strain and pain, arthritis, and human efficiency. The author's sense of values is so sound that he does not allow his subject to suffer through extravagant claims.

Posture is undoubtedly a very important factor in human efficiency, and yet its correction is no cure-all, and this Dr. Dickson very well knows as is shown by his sound evaluation.

The work is well illustrated, and corrective exercise technique is explained. The book is distinctly worthwhile.